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## **Aberdeen Proving Ground, Maryland**

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Revised Final

Phase I RCRA Facility Investigation Report

**Tooele Army Depot-North Area  
Suspected Releases SWMUs  
DAAA15-90-D-0011**

**Volume II  
Appendices A-J**

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December 1993

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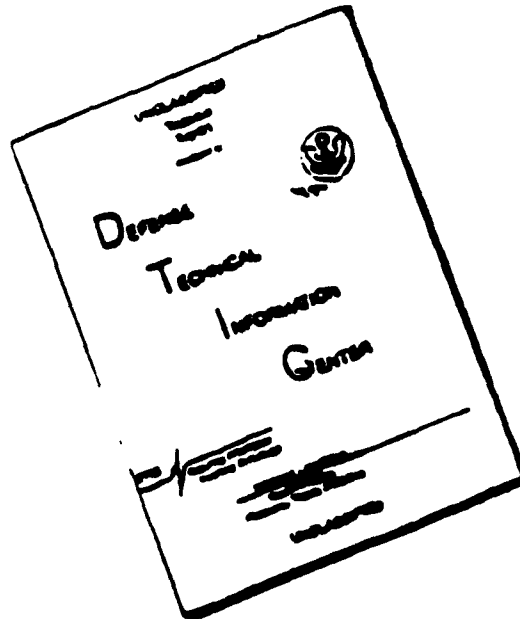
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**Aberdeen Proving Ground, Maryland**

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**August 1993**



**MONTGOMERY WATSON**

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## Appendix A

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## **APPENDIX A**

### **PHASE I RCRA FACILITIES INVESTIGATION FIELD PROGRAM**

#### **A.1 INTRODUCTION**

**A.1.0.1.** This appendix presents a summary of the field activities conducted by JMM in support of the Phase I RFI at TEAD-N during the summer of 1992. Included are descriptions of the investigation scope, organization of project personnel, sample handling, sample shipping, and a summary of the field work performed at each individual SWMU. In addition, facility-wide investigation activities are discussed. Also included in this appendix is a description of the health and safety program under which all field activities were conducted, and descriptions of sample collection, handling, and shipping procedures.

**A.1.0.2.** The Phase I RFI field activities were conducted in accordance with the project work plans prepared for this investigation. These include the Data Collection Quality Assurance Plan (JMM, 1992a), the Data Management Plan (JMM, 1992b), the Health and Safety Plan (JMM, 1990c). And the Project Management Plan (JMM, 1990d). Each of the plans were reviewed and approved by the State of Utah Department of Environmental Quality (UDEQ) and the USEPA.

#### **A.2 SCOPE OF THE PHASE I RFI FIELD PROGRAM**

**A.2.0.1.** Field investigations were conducted at 17 SWMUs suspected of releasing hazardous waste or hazardous waste constituents to the environment. At each individual SWMU a sampling program was developed, depending on site specific conditions and types of potential contaminants present. A number of investigative techniques were implemented to determine if hazardous waste or hazardous constituents have been released to the environment from the 17 SWMUs. All sample locations and a summary of analytical results are presented in the figures and tables included in section 5.0 of the Phase I RFI Report.

**A.2.0.2.** The scope of work of the 1992 Phase I RFI at TEAD-N consisted of the following:

- Obtaining base access for all project personnel and field vehicles
- Establishing on-base support facilities, including two office trailers, restroom facilities, and on-site communications

- Obtaining necessary excavation permits, utility clearances and discharge permits to conduct field activities
- Establishing a non-treated clean water source to be used for all field operations, including decontamination procedures
- Conducting a field survey to establish reference locations at each SWMU where sampling activities were conducted
- Conducting a ground conductivity and magnetic survey at SWMUs 1b and 1c to delineate previously-used debris/burn trench locations
- Excavating, sampling, and logging 121 test pits at SWMUs 1, 1a, 1b, 1c, and 1d (the OB/OD Area)
- Conducting extensive surface and shallow soil sampling at many of the SWMUs and Box Elder Wash
- Obtaining surface water samples at SWMUs 14, 45, and 47
- Obtaining two rounds of groundwater samples from 5 monitoring wells near SWMU 14
- Taking sediment samples at SWMUs 14, 45, and 47
- Taking one spent activated carbon sample at SWMU 38, under Level C health and safety protection
- Drilling and sampling a 25-foot soil boring at SWMU 45, and drilling and sampling eight 100-foot soil borings at SWMUs 1, 1a, 1b, 1c, and 1d
- Hand augering and sampling 5 shallow soil borings to a depth of 5 feet to provide analytical background values for the five soil types identified at TEAD-N
- Drilling and sampling one 100' boring near the OB/OD Area to evaluate background soil conditions at depth

- Plotting all sampling locations in relation to the field survey references
- Conducting two rounds of groundwater elevation measurements in 48 selected wells and piezometers located across TEAD-N
- Conducting all applicable on-site health and safety monitoring of project personnel
- Shipping all samples to the Environmental Science and Engineering (ESE) analytical laboratory in Gainesville, Florida, for analysis; all samples were handled in such a way as to maintain sample integrity, viability, and legal custody requirements
- Maintaining all required documentation

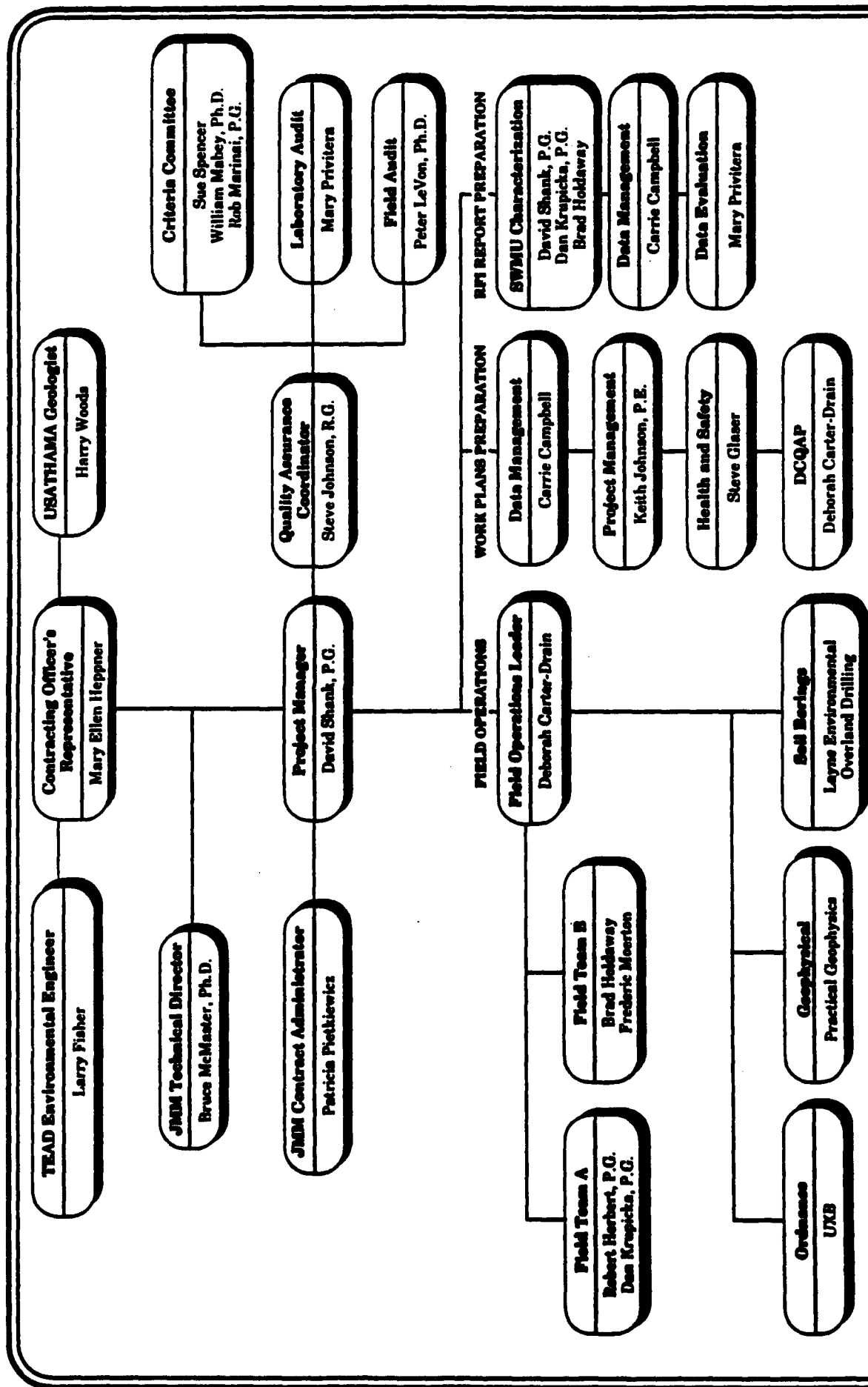
### **A.3 FIELD PROGRAM ORGANIZATION**

**A.3.0.1.** The JMM project team for the 1992 RFI was staffed and supported mainly through the Salt Lake City office of James M. Montgomery, Consulting Engineers. Some support staff from other JMM offices were utilized as needed. The JMM team was also supported by personnel from several qualified subcontractors at various stages of the project. Figure A-1 shows the project organization for this Phase I RFI.

#### **A.3.1. JMM Field Team Organization**

**A.3.1.1.** JMM field team personnel were divided into two separate field teams of two individuals each, which were supervised and coordinated by the Field Operations Leader. These field teams were designated "Team A" and "Team B" for purposes of field operations identification. Each field team was responsible for investigative activities at certain SWMUs or other areas, and generally operated independently of each other. Both field teams were on-site daily for the duration of the field activities, with the exception of the first and last 10-day shifts, when only one field team was required to perform the scheduled field activities.

**A.3.1.2.** As well as providing supervision of the field teams, the Field Operations Leader also provided field supervision for all subcontractors associated with the field program, and served as the On-site Safety Officer.



**PROJECT ORGANIZATION FOR  
TEAD-N PHASE I RFI**  
FIGURE A-1

### **A.3.2. Field Program Subcontractors**

**A.3.2.1.** The following subcontractors were utilized during all or part of the Phase I field investigation at TEAD-N:

- UXB International, Inc. (UXB), of Chantilly, Virginia, fielded personnel for the duration of the field activities in the OB/OD areas. Their responsibilities for this project were focused on providing explosive ordnance support for JMM personnel, and for other subcontractors working at the OB/OD area of TEAD-N. The UXB personnel were responsible for unexploded ordnance (UXO) detection and escort, heavy equipment operation, and general support activities during test pit excavations at SWMUs 1, 1a, 1b, 1c, and 1d. They were also responsible for down-hole UXO detection during drilling of the deep soil borings at the OB/OD area. UXB prepared a summary report describing their activities which is included as Appendix F.
- Environmental Science and Engineering, Inc. (ESE) Laboratory of Gainesville, Florida, provided the analytical laboratory work for the Phase I RFI. ESE is certified by both USATHAMA and the State of Utah Division of Environmental Quality (DEQ), and was responsible for the analytical tasks associated with the investigation, as well as electronic transfer of analytical data to JMM and to the Installation Restoration Data Management and Information System (IRDMIS). SWMU-specific tables of analytical results are included with the contamination characterization of each SWMU presented in section 5.0 of the RFI Report. Appendix C contains an evaluation of the analytical program and comprehensive data files of the testing results are included in Appendix K.
- Caldwell, Richards and Sorensen Engineering, Inc. (CRS) of Salt Lake City, Utah, performed location and elevation surveys at each SWMU to provide the field teams with reference locations. A summary of the field survey data is included in Appendix H.
- Layne Environmental Services, Inc. (Layne) of Salt Lake City, Utah, conducted drilling activities at the OB/OD area, drilling nine 100-foot boreholes. Layne provided drilling equipment, operator personnel, steam cleaning and soil sampling equipment (i.e., cyclone hopper, split- spoon soil samplers, etc.), and a

decontamination area for steam cleaning equipment. Layne also provided a smelting rig and 2 500-gallon tanks for purging and sampling the five monitoring wells included in the field investigation program for SWMU 14.

- Overland Drilling of Salt Lake City, Utah, was responsible for drilling shallow boreholes at SWMUs 26, 29, 42, and 45. Overland provided an all-terrain, hollow-stem auger drill rig, operator personnel, and all equipment and facilities for steam decontamination of equipment. All soil boring logs and test pit-excavation logs are included in Appendix B.
- Practical Geophysics of Salt Lake City, Utah, conducted terrain conductivity and magnetic geophysical surveys at the Burn Pad (SWMU 1b) and the Trash Burn Pits (SWMU 1c) during the OB/OD Area investigations. In addition, Practical Geophysics prepared digitally rectified aerial photographs of the areas of interest and fielded two personnel and equipment to conduct numerous geophysical traverses across previous burn/disposal features noted on aerial photographs. For this, survey equipment was used to locate these features from established reference points. Practical Geophysics also prepared a summary report of their activities which is included as Appendix E.
- The Salt Lake City office of Dames and Moore provided geotechnical support for this investigation by conducting geotechnical soil analyses of selected soil samples from the test pits and borings. Dames and Moore provided the personnel and facilities to conduct soil sieve and Atterburg limit analysis, as well as specific gravity determinations. Appendix J contains the results of the Dames & Moore geotechnical testing program.

## **A.4 SWMU-SPECIFIC INVESTIGATIONS**

**A.4.0.1. Introduction.** This section provides a summary of the field activities performed at TEAD-N during the period of mid-May to mid-August of 1992. Activities conducted prior to the beginning of fieldwork are summarized, followed by a description of the fieldwork performed by the respective field team at each SWMU.



#### **A.4.1 Preparatory Activities**

**A.4.1.1. During the period of May 11 to May 22, JMM personnel completed several activities in preparation for the upcoming field effort at TEAD-N:**

- A site visit to TEAD-N by JMM field personnel was conducted on May 15 for the purpose of familiarization with SWMU locations, sampling locations, sampling rationales, and obtaining base access badges for field personnel.
- Water Well III was sampled and tested according to USATHAMA procedures and designated as a clean water source.
- Two mobile office trailers were delivered to the base by Gelco, Inc. of Salt Lake City on May 19, and sited. The main office trailer was placed at the north end of the maintenance area at the location of Building 700. The other mobile trailer was placed at the OB/OD area for the use of the field crew during the field effort there.
- The field trailers were stocked with office supplies and other necessary equipment. Both trailers were supplied with electric service by TEAD-N. The main office trailer at the maintenance area was equipped with telephone service, a fax machine, and a copier. A portable outhouse was also delivered to each field trailer.
- Necessary field equipment such as field vehicles, sampling equipment, health and safety monitoring devices, cellular phones, etc., was gathered and transported to the JMM office trailers at TEAD-N.
- The necessary utility clearances, excavation permits, and a wastewater discharge permit were obtained from the appropriate base agencies.
- A meeting of JMM project personnel was held at the main office trailer at TEAD-N to become familiar with the IRDMIS nomenclature. Other topics discussed included sample documentation, COC procedures, QA/QC procedures, and health and safety issues.

#### **A.4.2. Open Burning/Open Detonation Areas (SWMU 1, 1a, 1b, 1c, 1d)**

**A.4.2.1. The Open Burning/Open Detonation Area consists of five subareas. These include:**

- Main Demolition Area (SWMU 1)
- Cluster Bomb Detonation Area (SWMU 1a)
- Burn Pad (SWMU 1b)
- Trash Burn Pits (SWMU 1c)
- Propellant Burn Pans (SWMU 1d)

**A.4.2.2. Because the Main Demolition Area, Cluster Bomb Detonation Area, and Propellant Burn Pan Areas are located near each other, these subunits were investigated at the same time and the field activities conducted at each are described together in this appendix. The Burn Pad and the Trash Burn Pits, which are also located near each other in an adjacent area, were also investigated at the same time and activities conducted in these areas are also described together.**

#### **A.4.3. Main Demolition Area (SWMU 1), Cluster Bomb Detonation Area (SWMU 1a), and Propellant Burn Pans (SWMU 1d).**

**A.4.3.1. Introduction. Although obscured by recent activity and plant growth, historical aerial photographs indicate the presence of numerous trenches and craters in the Main Demolition Area and Cluster Bomb Area. Since the Propellant Burn Pan Area is relatively new, this subarea does not appear in any of the historical aerial photographs. Field work, which consisted of locating and sampling these features, was carried out by Team A during the period May 27 to July 2, 1992.**

**A.4.3.2. Scope of the Investigation. The investigative techniques used to support the data requirements at SWMU 1, SWMU 1a, and SWMU 1d included:**

- Interpretation of historical aerial photographs
- Conducting ground truthing activities (field observations) to locate disturbed areas and confirm locations of previous OB/OD sites
- Clearing munition metal parts from work areas.

- Excavating, sampling, and logging of 25 test pits, for a total of 100 surface and shallow soil samples
- Field screening selected soil samples using USATHAMA-approved field methods for the determination of explosives in soil
- Drilling and sampling five 100-foot deep soil borings
- Marking selected test pits containing significant ash or debris with a permanent marker. Markers consist of a concrete-filled tube buried at least 2 1/2 feet in the ground with approximately 8 inches above ground. The top surface of the concrete contains a brass survey marker containing the test pit number. Table A-1 contains a list of marked test pits.

**A.4.3.3. Laboratory Analytical Programs.** All test pit samples were analyzed for explosives, metals, and anions. Selected samples were also analyzed for VOCs and SVOCs, depending on PID readings and spatial sampling distribution. One sample exhibiting staining or burn residue from each area (SWMU 1, SWMU 1a, and SWMU 1d) was collected and submitted for polychlorinated dibenzodioxins/polychlorinated dibenzofurans (PCDD/PCDF) analysis. All borehole samples in the OB/OD areas were analyzed for explosives, metals, and anions.

**A.4.3.4.** A number of samples from each subarea were also collected for explosive reactivity testing. However, before shipping, these samples were screened using the USATHAMA explosive field screening methods for TNT and RDX. Once the samples were screened, they were shipped to Southwest Research Incorporated (SWRI) for explosive reactivity testing by the U.S. Bureau of Mines GAP and Internal Ignition tests. Appendix G contains a summary of both the field screening methods and the results of the subsequent reactivity testing.

#### **A.4.4. Burn Pad and Trash Burn Pits (SWMU 1b and SWMU 1c)**

**A.4.4.1. Introduction.** Since SWMU 1b and SWMU 1c are both located proximal to each other, they were investigated by the same methods during the same time period. These investigations were conducted by Team A during the period August 4 to August 12, 1992.

**TABLE A-1****SUMMARY OF TEST PITS WITH PERMANENT MARKERS**

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EP-01-001	EP-01-015	EP-01-053	EP-01-106
EP-01-003	EP-01-018	EP-01-096	EP-01-107
EP-01-004	EP-01-019	EP-01-099	EP-01-108
EP-01-005	EP-01-025	EP-01-100	EP-01-109
EP-01-008	EP-01-026	EP-01-101	
EP-01-009	EP-01-028	EP-01-102	
EP-01-010	EP-01-029	EP-01-104	
EP-01-011	EP-01-052	EP-01-105	
EP-01-014			

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Note: Test pits up through EP-01-053 are in SWMUs 1, 1a, and 1d.

Test pits with numbers EP-01-096 and greater are shown in SWMUs 1b and 1c

**A.4.4.2. Scope of the Investigation.** The field program at these subunits was similar to that conducted in the other OB/OD areas and consisted of the following elements:

- Analyzing historical photographs to identify locations of burial pits and other areas of activity
- Developing a detailed composite aerial photograph based map which indicated burial sites
- Conducting a field survey to locate each burial area as indicated by the composite map
- Clearing munition metal parts from work areas
- Confirming burial areas using magnetic and terrain conductivity geophysical surveys
- Excavating and sampling 26 test pits, for a total of 52 surface and shallow soil samples
- Field screening selected soil samples for explosives

- Drilling three, 100-foot boreholes
- Marking selected test pits that contained significant ash or debris. Table A-1 (above) contains a list of the marked test pits.

**A4.4.3. Laboratory Analytical Programs.** All test pit samples were analyzed for explosives, metals and anions. Six samples were selected for explosive reactivity analysis. In addition, selected samples were analyzed for VOCs and SVOCs. Because past OB/OD activities may have generated dioxins, one sample containing obvious burn residue was selected for PCDD/PCDF analysis. Borehole samples were submitted for analysis of explosives, metals, and anions, and three samples were selected for explosive reactivity testing.

#### **A4.5. Box Elder Wash**

**A4.5.1.** In addition to sampling activities in the OB/OD subunits, eight surface soil samples were collected along the Box Elder Wash drainage to determine if OB/OD activities have released contaminants that may have been transported by surface water run-off. All eight of these samples were analyzed for explosives, metals, and anions.

#### **A4.6. Sandblast Areas (SWMU 4)**

**A4.6.1. Introduction.** Three Sandblast Areas exist in the Maintenance Area of TEAD-N. The Sandblast Areas were investigated by Team A on July 21, 1992. Samples were collected to determine if used sandblast media stored in these areas have released contaminants to the environment, as previous analysis of used sandblast media showed that it may contain hazardous constituents.

**A4.6.2. Scope of the Investigation.** Two soil samples were collected from each of three sandblast facilities. Sampling at each location occurred near dumpsters that contain spent sandblast media. Because of obstructions such as concrete slabs and paving, the exact sampling locations were determined by field personnel with the objective of sampling potentially effected surface soils and surface water runoff areas.

**A4.6.3. Laboratory Analytical Program.** Samples collected from the Sandblast Areas were analyzed for VOCs, SVOCs and metals.

#### **A.4.7. Sewage Lagoons (SWMU 14)**

**A.4.7.1. Introduction.** Previous investigations identified the two sewage lagoons located west of the Maintenance Area as a possible source of ground water contamination. To evaluate this possibility, Field Team B collected sediment and surface water samples from the sewage lagoons July 13, 1992.

**A.4.7.2. Scope of the Investigation.** Two surface water samples and two sediment samples were collected from the north lagoon and two sediment samples were taken from the south lagoon (as this lagoon was dry). In addition, groundwater samples from 5 nearby monitoring wells were collected during two rounds of sampling. To provide access for sampling the interior portions of the sewage lagoons, a small row boat was used. Sediment samples were collected using an Eckman Dredge-type clamshell sampler. Surface water samples were taken by filling the analyte-specific sampling containers directly from the lagoon. Groundwater samples were collected by using a decontaminated stainless steel bailer. Wells sampled include: N-134-90, B-1, N-135-90, N-136-90, and A-3. Prior to sampling, each well was purged using a stainless steel bailer on a snool-type pump rig to remove five casing volumes of ground water. All purge and decontamination water was containerized for discharge to the TEAD-N industrial wastewater treatment plant.

**A.4.7.3. Analytical Program.** The surface water and sediment samples were analyzed for VOCs, SVOCs, metals, and anions. Groundwater samples were analyzed for the same parameters with the addition of TPHC.

#### **A.4.8. AED Demilitarization Test Facility (SWMU 19)**

**A.4.8.1. Introduction.** A field investigation at the AED Demilitarization Test Facility was conducted by Team A on July 8, 1992, to determine if contaminants have been released to surface soils at the site. Contamination releases could have occurred at several locations where demilitarization test activities were conducted and from Building 1373 where historical aerial photographs indicate a liquid was spilled.

**A.4.8.2. Scope of the Investigation.** Twelve surface soil samples were sited to provide general coverage of the facility. Specifically, three samples were collected from the southeast end of building 1376, where a suspected spill was indicated in historical aerial photographs; eight samples were taken from several test areas within facility revetments; and one sample

was taken from an open area south of the facility where blast propagation testing was reported to have been conducted. Exact sample locations were determined judgmentally by sampling personnel based on field observations.

**A.4.8.3. Analytical Program.** All samples were analyzed for explosives, VOCs, SVOCs, metals and anions. Two samples were selected for explosive reactivity testing following field screening.

#### **A.4.9. AED Deactivation Furnace Site (SWMU 20)**

**A.4.9.1. Introduction.** With the exception of the analysis of baghouse dust, no previous investigations were conducted at the AED Deactivation Furnace Site. Due to the presence of heavy metals in the baghouse dust and the potential for releases from this facility, a site investigation was conducted by Team A on July 9 and 10, 1992.

**A.4.9.2. Scope of the Investigation.** A total of 16 surface soil samples were collected from the AED Deactivation Furnace Site. Soils around the perimeter of the facility and beneath the asphalt surface were sampled. Exact sample locations were determined judgmentally in the field by sampling personnel.

**A.4.9.3. Analytical Program.** All soil samples were analyzed for total metals, explosives, VOCs, and SVOCs.

#### **A.4.10. Deactivation Furnace Building (SWMU 21)**

**A.4.10.1. Introduction.** Previous investigations indicated the presence of metals and cresols in dust from the baghouse and on the floor underneath a conveyor. Because several potentially-hazardous compounds were detected in the dust and no environmental information was available for this site, a surface soil investigation was conducted by Team A on July 11, 1992.

**A.4.10.2. Scope of the Investigation.** A total of 10 surface soil samples were collected from around the perimeter and beneath paved areas at SWMU 21. Exact sample locations were based on judgment and field observations.

**A.4.10.3. Analytical Program.** Samples were analyzed for VOCs, SVOCs, total metals, explosives, and PCDD/PCDF.

#### **A.4.11. DROM Storage Yard (SWMU 26)**

**A.4.11.1. Introduction.** Since no previous sampling had been conducted at the DROM Storage Yard, an extensive soil sampling program was used to determine if previous waste handling practices released contaminants to the surface and near surface soils. Team B personnel conducted sampling during the period of June 23 -24, and June 29 - July - 7, 1992. Overland Drilling provided drilling subcontracting services at this SWMU.

**A.4.11.2. Scope of Investigation.** The intent of the sampling program was to provide general coverage of the entire DROM Storage Yard by using a combination of random and judgmental sampling criteria. The sampling program consisted of the following elements:

- Establishing a sampling grid covering the entire DROM Storage Yard
- Collecting 45 surface soil samples from stained or randomly-chosen locations from within the grid spaces
- Drilling soil borings to 3 feet bgs at 15 of the sample locations.
- Collecting a total of 15 shallow subsurface samples (from approximately 3 feet bgs).

**A.4.11.3.** The sampling grid was constructed using 150-foot spacing between grid lines. Sampling locations were chosen by selecting obviously stained and/or low lying areas. If no staining was present, a random number generator was used to generate a decimal number between 0 and 1, which was then multiplied by the maximum north and east cell dimension (150 feet). The resulting products represented the distances, measured from the southwest corner of each cell, to the sample location.

**A.4.11.4.** The 15 shallow subsurface soil sample locations were determined by choosing the most obvious stained and/or low-lying areas. Drilling occurred after the location was first sampled for a surface soil sample. A 2.5-foot split spoon sampler was driven to a depth of 3 feet using a 140-pound hammer on a CME 750 drilling rig. Upon retrieval, the spoon was opened, tested with an FID and sampled for VOCs. Each sample was photographed and logged in a boring log form. The sample was then placed into a stainless steel bowl and mixed with a stainless steel trowel or spoon before being sampled for other analytes.



**A.4.11.8. Analytical Program.** All of the samples selected for laboratory analysis were analyzed for VOCs, SVOCs and metals.

#### **A.4.12. RCRA Container Storage Yard (SWMU 27)**

**A.4.12.1. Introduction.** An investigation of the RCRA Container Storage Yard was conducted by Team B on July 15, 1992. The focus of the sampling activities were drainage in the facility coming from spill containment areas which daylight to the outside of the building. Also, areas where drums awaiting transportation to off-site disposal sites were routinely stored on pallets along the perimeter of the fenced area of this facility were investigated.

**A.4.12.2. Scope of Investigation.** The sampling approach consisted of collecting a surface soil sample beneath each of four drain pipes and three additional samples from areas where drums have been temporarily stored. Because gravel fill has been placed over the ground surface at this facility, soil samples were collected from soils immediately beneath the gravel fill.

**A.4.12.3. Analytical Program.** All soil samples were analyzed for VOCs, SVOCs, and total metals.

#### **A.4.13. 90 Day Storage Area (SWMU 28)**

**A.4.13.1. Introduction.** No previous investigation had been conducted at the 90-Day Drum Storage Area because it is only a few years old and it was determined that contaminant releases were unlikely. However, to meet Phase I RFI objectives, a surface soil sampling program was conducted.

**A.4.13.2. Scope of Investigation.** A total of eight surface soil samples were collected from the 90-Day Drum Storage Area. Three of the soil samples were collected from the area around an oil/water separator and five samples were collected following inspection of the ground surface for staining and/or low lying areas.

**A.4.13.3. Analytical Program.** All samples were submitted for total metals, VOCs, SVOCs, and TPHC.

#### **A4.14. Drum Storage Areas (SWMU 29)**

**A4.14.1. Introduction.** A limited number of surface soil samples were analyzed from the Drum Storage Areas during a previous remedial investigation (Weston, 1990). However, analyses of aerial photographs showed that soils in several areas where drums were staged had not been sampled. To meet the objectives of the Phase I RFI, additional surface and subsurface soil samples were collected to evaluate potentially contaminated areas. Team B conducted soil sampling activities during the period June 10 to June 18, 1992. Overland Drilling provided drilling services.

**A4.14.2. Scope of Investigation.** Sampling was designed to provide general coverage of the areas where drums were known to have been stored. The approach consisted of the following elements:

- Establishing a sampling grid in areas where historical aerial photographs and observations by persons knowledgeable of the site indicated drums were stored
- Selecting 27 shallow boring locations in the sampling grid spaces, and drilling and collecting a surface (0 to 2 ft bgs) and a shallow subsurface soil sample (3 to 5 ft bgs) in each borehole
- Drilling 10 5-foot soil borings in low-lying areas where precipitation runoff would tend to accumulate or flow, and collecting a surface (0 to 2 ft bgs) and a shallow subsurface (3 to 5 ft bgs) soil sample in each borehole.

**A4.14.3.** The sampling grid was constructed using 100-foot spacing between grid lines. Sampling locations were decided by selecting obviously stained and/or low lying areas. If no staining was present, a random number generator was used to generate a digital number between 0 and 1. This number was then multiplied by the maximum north and east cell dimension (100 feet). The resulting products represented the distances, measured from the southwest corner of each cell, which determined the sample location.

**A4.14.4.** A 2.5 inch diameter split spoon sampler was driven to a depth of 2 feet using a 140 pound hammer on a CME 750 drilling rig. The spoon was then opened, tested with an FID or PID, sampled for VOCs, photographed, and logged. The sample was then placed into a stainless steel bowl and mixed with a stainless steel spoon before being sampled for other analytes. The borehole was then advanced to a depth of 5 feet and the process repeated.

**A.4.14.5.** Ten shallow soil borings were also drilled in areas that may have been contaminated by surface water runoff from the Drum Storage Areas. The boreholes were positioned at topographic low areas such as drainage ditches, or areas where spills onto the asphalt surface of the Drum Storage Area may have collected or run off. Exact locations were determined judgmentally by field observations. A shallow and deep soil sample were also collected from each borehole using the previous sampling procedures.

**A.4.14.6. Analytical Program.** The surface soil samples collected from 0 to 2 feet bgs from the 27 grid-sited soil borings were analyzed for less mobile chemicals (i.e., total metals and pesticides). Seven of these samples were also selected for VOC, SVOC, and TPHC analyses based on organic vapor monitoring and/or soil staining. The deeper soil samples from these soil borings, collected at depths of 3 to 5 feet bgs, were all analyzed for total metals, pesticides, VOCs, SVOCs, and TPHC.

**A.4.14.7.** All of the samples from the ten soil borings in low lying areas were sampled for total metals and pesticides. In addition, three of the shallow samples were also submitted for VOC, SVOC, and TPHC analyses, and all 10 deep samples were analyzed for VOCs, SVOCs, and TPHC.

#### **A.4.15. Pesticide Handling and Storage Area (SWMU 34)**

**A.4.15.1. Introduction.** Historical information indicates that this SWMU has operated as a pesticide/herbicide handling and storage facility since the 1940s. Because these activities may have released contaminants to the environment, an investigation was conducted to meet the objectives of the Phase I RFI. Team A personnel sampled surface soils at this SWMU on July 21, 1992.

**A.4.15.2. Scope of Investigation.** A total of six surface soil samples were collected from the Pesticide Handling and Storage Area. Three samples were from beneath drain pipes from a fuel storage tank, mixing sink catch-tank, and a loading area drain, while three samples were taken from open areas around the building.

**A.4.15.3. Analytical Program.** All samples were analyzed for pesticides, herbicides, and metals.

#### **A4.16. Contaminated Waste Processing Plant (SWMU 37)**

**A4.16.1. Introduction.** Waste management practices at the Contaminated Waste Processing Plant (CWP) indicate a potential for a release of metals, SVOCs, PCDDs and PCDFs to the surrounding surface soils. To satisfy the objectives of the Phase I RFI, surface soil samples were collected from around the CWP by Team A on July 13, 1992.

**A4.16.2. Scope of the Investigation.** Twelve surface soil samples were collected from areas around the CWP chosen judgmentally based on field observations. Two surface soil samples were collected along the outside perimeter of each side of the facility and four surface samples were collected from exposed surface soils inside the facility perimeter. One sample was collected from the existing UST location.

**A4.16.3. Analytical Program.** All samples were analyzed for total metals, VOCs, SVOCs, explosives, and PCDD/PCDFs.

#### **A4.17. Industrial Wastewater Treatment Plant (SWMU 38)**

**A4.17.1. Introduction.** According to available information, windblown granular activated carbon (GAC), originating from open shipping containers stored at the Industrial Wastewater Treatment Plant (IWTP), may have contaminated the surface soil along the west side of this facility. To determine if contamination was present, surface soils were sampled by Team B on July 21, 1992.

**A4.17.2. Scope of the Investigation.** A total of five samples were collected at the IWTP in the vicinity of a used GAC storage bin. Four surface soil samples were collected along the west side of the plant where used GAC was observed. One sample of spent granular activated carbon was also collected directly from a shipping container. Exact sampling locations were determined judgmentally.

**A4.17.3. Analytical Program.** The sample of spent carbon was analyzed for VOCs, SVOCs, metals, and TCLP characteristics for VOCs, SVOCs, and metals. Soils were analyzed for VOCs, SVOCs, and total metals.

#### **A.4.18. Bomb Wash Out Building (SWMU 42)**

**A.4.18.1. Introduction.** Previous data indicated that elevated levels of metals were present in soils around this facility. An extensive field investigation of surface and shallow subsurface soils was conducted at this SWMU to confirm that a release had occurred and to evaluate the lateral distribution of contaminants that might be present. This investigation was carried out by Team B during the period July 26 - 28, 1992.

**A.4.18.2. Scope of Investigation.** Field Team B personnel selected the exact sample locations according to observations such as soil discoloration and/or lack of vegetation. Specific elements of the field sampling program included:

- Drilling seven soil borings to approximately 5 feet bgs along a wash water discharge flume and holding pond, and selecting two samples per borehole.
- Drilling two shallow soil borings to approximately 5 feet bgs at locations on either side of the discharge ditch and holding pond, and selecting two samples per borehole.
- Drilling four soil borings to approximately 5 feet bgs at the former location of the second furnace site (where discoloration and small quantities of metallic lead were found) and selecting two samples per borehole.
- Collecting eight surface soil samples from locations within a 300-foot radius of the Bomb Washout Building (Building 539).

**A.4.18.3. Analytical Program.** All samples were analyzed for total metals and explosives.

#### **A.4.19. Stormwater Discharge Area (SWMU 45)**

**A.4.19.1. Introduction.** Some preliminary samples taken from the Stormwater Discharge Area in 1990 by TEAD-N EMO personnel revealed the presence of VOCs in surface water and sediments. To determine if the ponded water and sediment in this area continues to be a source of contamination, additional samples of surface water and sediment were collected by Team B personnel on July 9, 1992.

**A.4.19.2. Scope of Investigation.** Three surface water samples and five sediment samples were collected from the Stormwater Discharge Area pond. Sample locations were left to the field team members' discretion. To evaluate the possibility of vertical contaminant transport, one 25-foot soil boring was drilled as close to the ponded water as possible, and seven samples from the boring were selected for analysis.

**A.4.19.4. Analytical Program.** Surface water samples were analyzed for VOCs, SVOCs, metals, and explosives. Sediment samples were also analyzed for the above constituents as well as for pesticides. The seven samples from the 25-foot soil boring were analyzed for VOCs, SVOCs, metals, and explosives.

#### **A.4.20. Used Oil Dumpsters (SWMU 46)**

**A.4.20.1. Introduction.** Used oil dumpsters are located throughout the Administration and Maintenance Areas of TEAD-N. To determine if they have released contaminants to the environment, samples of surface soils and shallow subsurface soils were collected by Team A during the period July 22 - 25, 1992. In addition, because a large diesel oil spill was reported adjacent to the southeast corner of Building 637, this area was also sampled.

**A.4.20.2. Scope of Investigation.** Investigations at this SWMU entailed collecting 36 soil samples in the vicinity of several used oil dumpsters and from the southeast corner of Building 637. Sample locations were determined judgmentally in the field. Where possible, up to two surface samples and two subsurface (approximately 1 foot) samples were collected at each used oil dumpster. Additional samples were collected in surface water runoff pathways.

**A.4.20.3. Analytical Program.** All samples were analyzed for TPHC.

#### **A.4.21. Boiler Blowdown Water (SWMU 47)**

**A.4.21.1. Introduction.** This SWMU consists of three locations: Buildings 600, 610, and 637. Boiler blowdown water discharged at each of these locations was suspected of containing contaminants that could be released to the nearby soils and surface water. To determine if boiler blowdown water has released contaminants to the environment, samples of surface water and sediment were collected. Sampling was conducted by Team B personnel on July 15, 1992.

**A.4.21.2. Scope of Investigation.** The types of media sampled at each SWMU 47 location were determined by the field investigation team and depended upon the conditions at each location. At Building 610, both a surface water and sediment sample were collected from a sump where boiler blowdown water discharges from the building. At Building 600, a sample of sediment was collected from the east side of the building where boiler blowdown water discharges onto the ground. Because no surface water was present, it was not sampled. At Building 637, boiler blowdown water discharges to a drain which leads to the IWTP. Because the discharge is onto a paved surface, and no surface water or sediment were present, no sample was collected from this location.

**A.4.21.3. Analytical Program.** Sediment and surface water samples were analyzed for VOCs, SVOCs, total metals, and TPHC.

## **A.5 FACILITY-WIDE INVESTIGATIONS**

**A.5.0.1.** In addition to the field activities performed to characterize contamination at specific SWMUs at TEAD-N, three facility-wide investigations were conducted during the field program. These include: background soil sampling, groundwater elevation measurement, and a topographic field survey. These investigations are summarized in the following sections.

### **A.5.1. Background Soil Sampling**

**A.5.1.1. Shallow Background Soil Borings.** During the period of July 26-27, Team A personnel completed five shallow soil borings in undisturbed soils across TEAD-N. The boring locations were sited to provide data on the five soil types identified at TEAD-N by the U.S. Soil Conservation Service. In addition to these five soil borings completed by JMM personnel, four shallow borings were completed by personnel from SEC Donahue during their concurrent field program at TEAD-N. The combined data from these shallow soil borings was used to develop a data base of background, or baseline, concentrations of metals and anions that is representative of the natural, undisturbed soils at TEAD-N. Sample locations and the results of the background soil sampling programs are discussed in section 4.0 of the Phase I RFI Report.

**A.5.1.2.** The borings were completed to a depth of 5 feet using a stainless steel hand bucket auger. Two samples were taken from each boring; one from a depth of 0 to 1 foot, and the

other from a depth of approximately 3 to 5 feet. The collected soil samples were submitted for analysis for total metals, selected anions, and pH.

**A.5.1.3. Deep Background Soil Boring.** During July 22-23, JMM and Layne Drilling personnel completed one 100-foot deep background soil boring in the southwestern corner of the TEAD-N facility. This deep boring was sited to provide background analytical data on the deeper soils at the OB/OD Area. Seven soil samples selected from this boring were submitted for metals, anions, and pH analyses.

#### **A.5.2. Groundwater Elevation Measurement**

**A.5.2.1.** On July 9, JMM personnel conducted depth-to-water measurements of 48 monitoring wells and piezometers across TEAD-N, and including some wells located off the facility. This time of year was chosen to correspond to the seasonal ground water maximum at the facility. Water levels were measured to the nearest 0.01 foot using a Solinst electronic water level meter. All measurements were referenced to a known elevation at the top of the inside well casing.

**A.5.2.2.** In late January, 1993, a second round of groundwater measurements was conducted at the previously-measured wells and piezometers, located both on and off the Depot. This round of measurements was scheduled to correspond with the approximate seasonal ground water low at TEAD-N. The same techniques and equipment were used as in the previous round of measurements. The data from both rounds are summarized in the groundwater elevation contour map presented in Section 3.0 of the Phase I RFI Report. In addition, a summary of the measurements and elevations is included in Appendix D.

#### **A.5.3. Field Survey**

**A.5.3.1.** Two topographic surveys were conducted in support of the Phase I RFI field program. The first was conducted across TEAD-N during the first weeks of the field work. To enable sample locations to be tied to the references at the time of sample collection, survey reference locations were sited and marked at each SWMU where field sampling activities would be conducted. These surveyed reference locations are included in Appendix H. All survey data and sample location data were presented in terms of the Utah State plane coordinate system, for entry into the IRDMIS data base.



**A.5.2.2.** The second topographic field survey was conducted during the final stages of the Phase I RFI field work. During this effort, the locations of the nine deep soil borings at the OB/OD Area, and the 25-foot boring drilled at SWMU 45, were directly surveyed. This information was entered into the IRDMIS data base and is also included in Appendix H.

## **A.6 OTHER FIELD OPERATIONS**

### **A.6.1. Soil Geotechnical Analyses**

**A.6.1.1.** Approximately 12 percent of the soil samples collected during the RFI were submitted to the geotechnical laboratory of Dames and Moore in Salt Lake City, Utah, for geotechnical analysis. Parameters analyzed include grain-size analysis (to confirm on-site USCS soil characterizations), specific gravity, and Atterburg limits. Appropriate American Society for Testing and Measures (ASTM) methods were used for the respective analyses. A summary of the geotechnical testing program results is included as Appendix J.

**A.6.1.2.** Soil samples submitted for geotechnical testing were selected by JMM personnel according to the following criteria:

- At least one representative sample of each soil horizon sampled at each SWMU or encountered at the background soil sampling locations
- Representative samples of each major soil unit encountered in the deep background soil boring at the OB/OD Area

### **A.6.2 Archived Soil Samples**

**A.6.2.1.** For selected soil samples, an additional aliquot of sample was containerized in commercially-available mason jars and archived for future inspection and geotechnical analysis by USATHAMA personnel. Samples archived included all those collected from the test pits and the deep soil borings at the OB/OD Area, samples collected from all shallow soil borings, and soils representative of those encountered at surface sampling sites at all SWMUs.

**A.6.2.2.** The mason jars containing the archive samples were labeled and placed back into their respective cardboard boxes, which each contained 12 jars. The samples are currently stored at Building 506 in the administration area of TEAD-N.

### **A.6.3 Field Explosives Screening**

**A.6.3.1.** A total of 24 soil samples from the field investigation were submitted for explosive reactivity analysis using the U.S. Bureau of Mines GAP Test and the Internal Ignition Test. These samples included:

- Twenty-two soil samples selected from the test pit excavations and the deep soil borings at the various OB/OD subunits
- Two surface soil samples collected from SWMU 19, the Demilitarization Test Facility

**A.6.3.2.** Prior to shipment of these samples, field screening for the presence of the explosive compounds 2,4,6-TNT and RDX was conducted by JMM personnel. These samples were analyzed using the USATHAMA methods "Field Method For The Determination Of 2,4,6-TNT In Soil" and "Field Method For The Determination Of RDX In Soil", which are included as Appendix D in the DCQAP (JMM, 1992a). An on-site field laboratory was set up for the screening analyses, including a Hach DR2000 spectrophotometer, glassware, and all necessary reagents.

**A.6.3.3.** The purpose of the field screening was to avoid the commercial shipment of material considered hazardous due to its explosive nature. Even though some of the screened soil samples showed traces of 2,4,6-TNT and/or RDX above the respective method CRLs, none were noted to be at or above the threshold for explosivity, which is about 10 percent (by weight) of explosive compound(s). The results of the explosives screening analyses are included in Appendix G.

### **A.7 HEALTH AND SAFETY PROGRAM**

**A.7.0.1.** Due to the potential for encountering hazardous materials during invasive field activities at TEAD-N, the Health and Safety program was a major part of the project. The purpose of the Health and Safety Program was to provide the field investigation personnel, including subcontractors, with a safe working environment during field activities at TEAD-N.

## **A.7.1 General Health and Safety Procedures**

**A.7.1.1. The following project-wide health and safety procedures were applied during the field investigation:**

- All JMM employees and subcontractor personnel were required to be current with respect to OSHA hazardous waste site worker training requirements as stated in 29 CFR 1910.120. All on-site employees were also required to be participants in their respective employers' medical surveillance program.
- All personnel were required to attend a daily tailgate safety meeting, conducted by the On-site Safety Officer (OSO). For activities at the OB/OD area, the tailgate safety meetings were conducted by the UXB International field team leader. Written documentation, including the signatures of all attendees, was maintained.
- A written log was kept of calibrations of all instruments used to monitor a site for health risks.
- Applicable personal protective equipment (PPE) was utilized according to the site activity. This is treated in more detail in the next sections.
- Continual air monitoring was conducted at all sites where contamination was suspected to be present. The monitoring program utilized an Organic Vapor-Monitor (OVM) photo ionization detector, and an Organic Vapor Analyzer (OVA) flame ionization detector to monitor for presence of health-endangering organic vapors. In addition, each field team was equipped with a Miniram PDM-3 respirable dust monitor to quantitate respirable dust present in the work zone. Table 6-1 in the HASP (JMM, 1992c) lists these levels of dust and organic vapors requiring an upgrade in PPE. During the field investigation activities, no level of organic vapor was detected requiring an upgrade in PPE. Applicable instrument readings were taken at 15-minute intervals during field activities, and recorded on dedicated forms.
- Monitoring of boreholes for the presence of explosive vapors was conducted using a portable Combustible Gas Indicator. No detectable explosive vapors were encountered during field activities.

- Noise monitoring was conducted periodically during invasive site activities such as drilling. A noise dosimeter was used to check for time-weighted average exposures greater than 85 dBA, which would require mandatory use of hearing protection devices. Noise levels during percussion hammer drilling routinely exceeded the 85 dBA level, and hearing protection was worn by all involved personnel during drilling of the deep boreholes.
- The "buddy system" was used during all field activities in areas where contamination was suspected. This kept each field individual within the observation of another person, insuring rapid response to any medical emergency.
- Emergency response phone numbers and maps showing the most expedient routes to emergency medical facilities were kept in each field vehicle and also each office trailer.
- Level C PPE was maintained on-site for all field team and subcontractor personnel where an upgrade in PPE might be necessary. This included Tyvek outerwear, Tyvek or rubber boots, rubber gloves, and a full- or half-face respirator equipped with the appropriate cartridges. All respirators were required to have been previously fit-tested for that individual.
- As per TEAD-N Safety Program requirements, equipment worn by individuals engaged in steam-cleaning activities included a waterproof suit with hood, earplugs or earmuffs, a face shield plus safety glasses, insulated rubber gloves, and butyl rubber safety boots.

#### **A.7.2. Health and Safety Procedures - Soil Sampling**

**A.7.2.1. Contamination routes associated with soil sampling activities, and protective measures instituted during the investigation to minimize exposure to contaminants during these activities, were as follows:**

- **Dust Inhalation.** Dust stirred up by digging or coring into the soil, or by wind, can contain contaminants, and be inhaled into the lungs. To monitor the inhalation hazard, a Miniram PDM-3 respirable dust monitor was worn by one member of each field team. The readings were continuously observed, and

recorded at 15-minute intervals. Readings above a certain threshold value would require an upgrade in PPE to Level C, including full- or half-face respirators.

- **Vapor Inhalation.** Volatile contaminants contained in the soil could pose a potential health risk if encountered during soil sampling activities. To monitor this possible exposure route, each field team carried an OVM or OVA organic vapor detector. Readings were recorded every 15 minutes. Organic vapor levels at, or above, the designated threshold values would require upgrading of PPE to Level C.
- **Skin Contact.** As with the inhalation hazard, dust stirred up by wind or sampling activities can also come in contact with exposed skin. As previously mentioned, a Miniram portable dust monitor was worn by a member of each field team to monitor this airborne dust hazard. Also, soil sampling activities can cause direct contact of the hands and forearms with the soil being sampled. To alleviate this contact hazard, disposable rubber gloves and long-sleeved shirts were worn during soil sampling activities.

**A.7.2.2.** In general, Level D protection was required for all soil sampling activities. This included work boots (steel-toed if working around heavy equipment), long pants, long-sleeved shirts, and safety glasses. The added protection of polycoated Tyvek coveralls was required for soil sampling at SWMU 34, the Pesticide Handling and Storage Area, due to the increased possibility of encountering volatile and semi-volatile pesticide residues in the sampled soils.

### **A.7.3. Health and Safety Procedures - Water Sampling**

**A.7.3.1.** Water-borne contaminants present during water sampling activities at TEAD-N could conceivably pose a health threat to team members engaged in surface water or groundwater sampling activities. To minimize contact with possible contaminants, the following measures were observed for their respective exposure routes:

- **Vapor Inhalation.** As ground water or surface water is disturbed during the process of physically obtaining a water sample, vapor inhalation of any volatile constituents in the water could be increased. This could pose an inhalation hazard to any field team member obtaining the sample. To monitor this exposure route, each field team carried either an OVA or OVM organic vapor detector

which was continuously monitored while engaged in sampling activity at all SWMUs, with the exception of SWMU 47. No airborne contaminants were expected at this SWMU (Boiler Blowdown Water). Readings were recorded on a Daily Health and Safety Log at 15-minute intervals while the field team was at the SWMU. Threshold readings for organic vapors at the various SWMUs were generated, and appear as Table 5.1 in the HASP (JMM, 1992c). Readings at or above these threshold values required an upgrade to Level C PPE, including a half-face or full-face respirator equipped with approved organic vapor cartridges.

- **Skin Contact.** Since the process of obtaining a surface-water or groundwater sample can involve splashing, spilling, or immersion of hands in the water, physical contact with contaminated water was considered a possible exposure route. To prevent possible contact of skin with contaminated water during the sampling process, Level D protection was supplemented with polycoated Tyvek coveralls, plus nitrile gloves. For surface-water and groundwater sampling at SWMU 14, the sewage lagoons, inner latex gloves were worn under the nitrile gloves.

#### **A.7.4. Health and Safety Procedures - GAC Sampling**

**A.7.4.1.** Due to the high probability of encountering volatile and semi-volatile organic contaminants while sampling the spent granular activated carbon (GAC) container at the Industrial Wastewater Treatment Plant, full Level C protection was required. This level of protection was considered necessary to insure minimum health risks while sampling this particular medium. The PPE worn by the sampling individual included a full-face air purifying respirator with combination organic vapor/HEPA cartridges, polycoated Tyvek coveralls, steel-toe boots with chemical-resistant overboots, inner latex gloves and outer nitrile gloves. Organic vapor monitoring was conducted during the sampling episode.

#### **A.7.5. Health and Safety Procedures - Potential UXO Areas**

**A.7.5.1.** Because the possibility of encountering unexploded ordnance (UXO) existed during field activities at the OB/OD area, procedures designed to minimize the health and safety risks associated with UXO were instituted there.

**A.7.5.2. Field Escort.** Any field activities requiring any JMM field team member or subcontractor to leave established roads in the OB/OD area required an escort by UXB

subcontractor personnel. This was all included, and pertained to the excavation, sampling, deep boreholes, background soil sampling, geophysical investigation, and site surveying.

**A.7.5.3. Contact With Base AED Personnel.** The UXB Field Project Leader maintained a working relationship with on-site base AED personnel such that information pertaining to down-range AED activities was effectively communicated to all project personnel. This was especially important with regard to the propellant and/or munitions demilitarization activities which occurred on a daily basis, four days each week. These events required the evacuation of all project personnel to a safe area. On-going communication with base personnel also facilitated the removal or in-place demilitarization of items located during the course of OB/OD field activities.

**A.7.5.4. UXO Geophysical Activities.** Surface sweeps for UXO were conducted by UXB personnel preliminary to any OB/OD field activities requiring off-road movement of heavy equipment or continuous personnel traffic; i.e., excavation of test pits, drilling, and the ground conductivity/magnetic investigation. In addition to visual surface inspection, specialized electronic metal detection equipment was utilized for ordnance detection. Three instruments were on site at the OB/OD area:

- The Ferretor Ferret Electromagnetic Detector is a military approved locator used by U.S. military EOD forces under designation as the ML 26 Ordnance Locator. This locator was used both for surface sweeps and down-hole ordnance detection, and was the primary location instrument in use during field activities.
- The White's Eagle II Metal Detector contains a transmitter coil which operates on the induction principle. The advantage of the White's is its ability to detect both ferrous and non-ferrous metals.
- The Schonstedt GA-52B locator was kept on site, but not used during the field activities.

**A.7.5.5.** Due to the fact that large areas of the OB/OD area were littered with abundant metal fragments from past demilitarization activities, the effectiveness of the geophysical location equipment was decreased. Interference from surface "frag" made it difficult to detect the presence of actual ordnance items. Because of this, visual surface clearing for munition

metal parts was generally used by UXB personnel to insure safe surface passage of individuals and equipment.

**A.7.5.6. Excavation Procedures.** Due to the extreme health hazards associated with munitions and the invasive nature of test pit excavation and sampling activities, several procedures unique to the OB/OD area were used:

- An area approximately 50 feet in radius around the previously-staked trench location was marked off by four 36-inch orange traffic cones, with two other cones placed to mark the backhoe entrance/exit from the area.
- UXB personnel conducted a surface visual sweep for UXO, using a method of walking parallel lanes across the marked area. Where possible, the visual sweep was combined with geophysical methods. Any items discovered were flagged, and later reported to the base AED personnel. If, in the opinion of the UXB Project Leader, a potentially dangerous item could be safely moved to a central location, it was transported to an accessible area for removal by TEAD-N personnel.
- After moving the backhoe to the trench location, test pit excavation was begun. Soil was removed in 6-inch to 12-inch lifts under the observation of a UXB employee. JMM field team personnel were staged outside the 50-foot exclusion zone while excavation activities were in progress.
- As a sampling interval was reached, or at the completion of the test pit, the backhoe bucket was placed to one side, the backhoe shut down, and the JMM sampling personnel were signaled. Only at this time would the sampling team approach the test pit excavation across the previously-cleared exclusion zone. An organic vapor detector (OVA or OVM) was carried by the sampling personnel and all soil samples and the excavations were monitored for organic vapors which might be present.
- Following sampling and logging tasks at the test pit, the pit was backfilled, again under the visual inspection of a UXB observer. No potentially explosive items were placed back into a test pit.
- As stated in the HASP (JMM, 1992c), encountering a drum or suspected hazardous chemical would require ceasing excavation activities at that pit.



During the OB/OD field investigation, several drains were encountered in excavations, but none were intact.

- Project personnel working in the OB/OD area were required to have a cellular phone on site for use in emergency situations.
- In addition to the required Level D PPE, an approved hardhat was required for both JMM and UXB personnel when working with the backhoe. Hardhats were also required for all drilling personnel while drilling deep boreholes.

**A.7.5.7. Deep Borehole Drilling Procedures.** As with excavation activities, the invasive nature of drilling, combined with the unique health hazards of UXO, required a health and safety procedure protective of man health.

- Due to the large size and weight of the percussion drilling rig used, and its support truck, it was considered necessary to clean all munition metal parts to a depth of approximately 2 feet. Because of difficulties with the geophysical methods, due to the presence of large amounts of metallic surface frag, all soil to a depth of 2 feet, was removed from each borehole location. This was accomplished by utilizing a D-7H Caterpillar, provided by TRAD-N. The operation was monitored by the UXB Project Leader.
- During drilling operations, the Forster Ferex locator was re-configured and used down the borehole for ordnance detection. After drilling the first 4 feet, the locator was lowered to the bottom of the hole. If no metallic contacts were present, it was withdrawn and drilling proceeded for another 4 feet. This procedure was repeated every 4 feet, until a depth of 20 feet was reached, below which it was assumed no munition metal parts should be present, and drilling could proceed uninterrupted. During the deep borehole drilling, the necessity to move the drill location due to presence of munition metal parts was not encountered.

## **A.8 SAMPLE COLLECTION, HANDLING, AND SHIPPING**

**A.8.8.1.** The goal of any field sampling operation is to obtain samples of the suspect medium such that the analytical results obtained from the laboratory are meaningful; i.e., they are precise, representative, accurate, comparable, and complete. An important part of insuring

that the data meet these criteria are the sample handling procedures used to transmit the respective samples from sampling medium to the analytical laboratory.

#### **A.8.1. Sample Collection**

**A.8.1.1. Soil and Sediment Samples.** Soil and sediment samples collected at the various sampling sites, with the exception of the soils collected for explosive reactivity analysis, were placed into commercially-available stainless steel bowls and physically stirred with the stainless steel sampling implement (spoon or trowel) to homogenize the sample. Following homogenization, the collected samples were placed in 500 mL amber glass jars. If the sample was to be submitted for volatile organic compounds (VOC) analysis also, an aliquot of undisturbed soil at the sample location (prior to homogenization) was placed into 60 mL amber glass jars with Teflon-lined caps. These 60 mL jars for VOC analysis were filled completely, such that no void space was left between sample and cap.

**A.8.1.2.** A sufficient amount of sample was collected to fill two 500 mL sample jars for each sample. Two sample jars were submitted so as to provide plenty of sample material for all analyses, even in the event that one of the jars was broken during shipment.

**A.8.1.3.** After sample aliquots were appropriately jarred and labeled, the soil remaining in the stainless steel bowl was characterized according to the Unified Soil Classification System (USCS).

**A.8.1.4.** Soil samples collected for explosive reactivity analysis were placed directly into a 3-gallon size plastic cooler lined with a commercial plastic garbage bag. The plastic bag was wound closed and fastened with tape or a metal tie, and the lid of the cooler closed. These soil samples were not cooled.

**A.8.1.5. Surface Water and Groundwater Samples.** Three types of sample containers were used for the collection of water samples during the field investigation. See Table 5-4 in the DCQAP for their respective analytes.

- 1 L amber glass jars
- 1 L plastic cube containers
- 40 mL amber glass bottles with Teflon septa exposed on the lid

**A.8.1.6.** All water sample containers were first triple rinsed with sample water prior to filling, and then filled completely to the top. In the case of those samples being submitted for VOC analysis, the sample container was turned upside down after securing the lid, and the sample checked for the presence of air voids, which would require correction.

**A.8.1.7.** Water samples requiring preservation were done in the field at the time of sample collection. Table 5-4 in the DCQAP (JMM, 1992) shows the appropriate preservative for each analyte.

**A.8.1.8.** All collected water samples were characterized as to pH, conductivity, and temperature at the time of sampling. All measurements were recorded in the respective field team's bound field log book, as well as on the Groundwater/Surface-Water Sampling Log.

## **A.8.2. Sample Handling and Shipping**

**A.8.2.1.** Each sample obtained during the field investigation at TEAD-N was assigned a unique site ID number (sample number), using the following convention:

### **AA-XX-ZZZ**

where: AA = Site Type

where: SB = soil boring  
SS = surface soil  
EP = excavation pit  
SD = sediment  
SW = surface water  
AC = activated carbon

where: XX = SWMU no. or BK = background  
(for SWMU nos. less than 10 use a zero  
before the number - i.e., 01, 05, etc.)

where: ZZZ = sequential site number from 001 to 999

**A.8.2.2.** The sample containers used for the investigation were provided by ESE laboratory of Gainesville, Florida, the analytical subcontractor for the project. They consisted of pre-cleaned amber glass I-Chem bottles with Teflon-sealed plastic lids. The sizes used during the sampling ranged from 1-L bottles to 40 mL bottles. Table 5-3 in the DCQAP (JMM, 1992),

provides detailed information on sample containers, preservatives, and holding times for soil samples, and Table 5-4 in the DCQAP describes these parameters for water samples.

**A.8.1.3.** Following the sampling operation and sample labeling, the sample container(s) was placed in a cooler containing frozen blocks of blue ice to cool the sample to the required 4°C. Though this is not a handling requirement for metals, cyanide or anions, it is a requirement for the majority of the other requested parameters for the investigation. As the sample was placed into the cooler, it was logged on a field sample sheet; sample number, date and time taken, number and type of bottles, and parameters requested were recorded. This helped facilitate the later completion of the chain of custody for shipping.

**A.8.1.4.** After the completion of the daily sampling tasks, the sample cooler containing the samples was transported to the main on-site office trailer to be prepared for shipment to the analytical laboratory. All glass sample containers were wrapped with one or two layers of plastic bubble wrap, fresh blue ice was added to the cooler(s), and the samples were packed as securely as possible within the cooler(s). Additional bubble wrap or Styrofoam packing was used, if necessary, to hold all sample containers securely in place.

**A.8.1.5.** In conjunction with the packing procedure, the following handling and shipping documentation was prepared:

- A chain of custody (COC) was completed, showing all sample ID numbers, number of containers, date and time taken, analyses requested, and other pertinent information. These COC forms were provided for the investigation by ESE Laboratory, pre-printed with the sample ID designations, equipment blank and trip blank documentation was included. The original signed copies of the COC were included with one of the shipped coolers for all that respective field team's samples; they were placed inside a plastic envelope stuck to the inside of the cooler top. A copy was retained for JMM project records. The COC form was meant to meet applicable sample custody requirements and documentation necessary to maintain legal defensibility of the generated analytical data.
- A separate form was completed which recorded each individual cooler's sample contents, including equipment blanks and trip blanks. This documentation was maintained to provide a record of what specific samples were contained in an individual cooler in the event of loss of that cooler in shipment. As with the COC

forms, the original form was sent with the cooler and a copy was kept for project records.

- The field sample sheet, filled out at the time of the sampling event, was also included with the cooler and a copy retained for the project files.

**A.8.1.6.** After the samples and paperwork were secured in their respective coolers, the coolers were closed, fastened with fiberglass strapping tape wound around the cooler in three places, secured with dated and initialed custody seals in two places, and labeled with the appropriate shipping and return labels. A Federal Express shipping label was made out and affixed to one of the coolers; up to three coolers could be sent on one shipping label.

**A.8.1.7.** The completed sample coolers were transported daily, Monday through Friday, by JMM company vehicle to the Federal Express receiving office located at the Salt Lake City International Airport. Those samples collected on Saturday and Sunday were placed in a full-size refrigerator at the main JMM office trailer. Both the office trailer and the refrigerator were secured when no JMM project personnel were present at the trailer.

**A.8.1.8.** All sample coolers shipped were sent via Federal Express overnight delivery to the ESE Laboratory in Gainesville, Florida.

**A.8.1.9.** The smaller coolers containing the soils scheduled for explosive reactivity analysis were stored at the main JMM office trailer prior to field screening for explosive compounds (see Appendix G). After the screening procedure, these samples were sent via Federal Express in two separate batches to the Southwest Research Institute in San Antonio, Texas.

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## Appendix B



**MONTGOMERY WATSON**

## **APPENDIX B**

### **TEST PIT AND SOIL BORING LOGS**

#### **B.1 INTRODUCTION**

**B.1.0.1.** This appendix contains the following documentation of field activities at TEAD-N during the Phase I RFI:

- Logs of all test pits excavated at the OB/OD Area (SWMU's 1, 1a, 1b, 1c, 1d)
- Soil Boring Logs for all soil borings completed at various SWMU's during the Phase I RFI

**B.1.0.2.** The excavation and soil boring logs in this appendix are arranged as follows:

1. Test Pit Logs for all SWMU's at the OB/OD Area (1, 1a, 1b, 1c, 1d)
2. Soil Boring Logs for all SWMU's at the OB/OD Area
3. Soil Boring Logs for the DDMO Storage Yard (SWMU 26)
4. Soil Boring Logs for the Drum Storage Areas (SWMU 29)
5. Soil Boring Logs for the Bomb Washout Building (SWMU 42)
6. The Soil Boring Log for the Stormwater Discharge Area (SWMU 45)

#### **B.2 DESCRIPTION OF TEST PIT LOGS**

**B.2.0.1.** The excavation test pit logs represent a schematic and written description of the soils encountered during excavation and sampling activities. The data at the top of the form designates the test pit number, the date and time of excavation and a brief description of the weather conditions at the time of excavation. Under this preliminary data is the diagrammatic representation of the completed pit; the soil stratigraphy, pit outline, and location of the collected soil samples within the pit are shown. Pit dimensions are shown both laterally and vertically. Following the diagram are the sample number designations of the collected soils and a USCS designation and description of the soil. Readings from the organic vapor detector used in conjunction with the sampling activities are also shown. Comments regarding debris encountered in the pit and any other information bearing on the respective excavation are recorded at the bottom of each test pit log.

**B.2.0.2.** All the test pit logs from the Phase I RFI were completed by JMM personnel in the field. No office transcription or drafting has been done on the logs.

### **B.3 DESCRIPTION OF SOIL BORING LOGS**

**B.3.0.1.** The soil boring logs contain depths below ground surface in a column down the center of the logsheet, and information on soil description, sample intervals, blow counts, and organic vapor detector readings to the left and right of the depth. A small diagram showing the approximate borehole location appears in the upper left corner, and a graphic lithology log is shown to the left of the depth column.

**B.3.0.2.** As with the test pit logs, the soil boring logs were completed in the field by the JMM on-site personnel.



MAJOR DIVISIONS			GRAPH SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS	
COARSE GRAINED SOILS          MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS   MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS  (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
		GRAVELS WITH FINES  (APPRECIABLE AMOUNT OF FINES)		GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
				GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES	
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES		
	SAND AND SANDY SOILS  MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	CLEAN SAND  (LITTLE OR NO FINES)		SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	
		SANDS WITH FINES  (APPRECIABLE AMOUNT OF FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	
				SM	SILTY SANDS, SAND-SILT MIXTURES	
			SC	CLAYEY SANDS, SAND-CLAY MIXTURES		
FINE GRAINED SOILS    MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS  LIQUID LIMIT LESS THAN 50			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OR LOW PLASTICITY	
	SILTS AND CLAYS  LIQUID LIMIT GREATER THAN 50			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS	
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	
					OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
					HIGHLY ORGANIC SOILS	

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS.

FIGURE B-1

## SOIL CLASSIFICATION CHART

# UNIFIED SOIL CLASSIFICATION SYSTEM

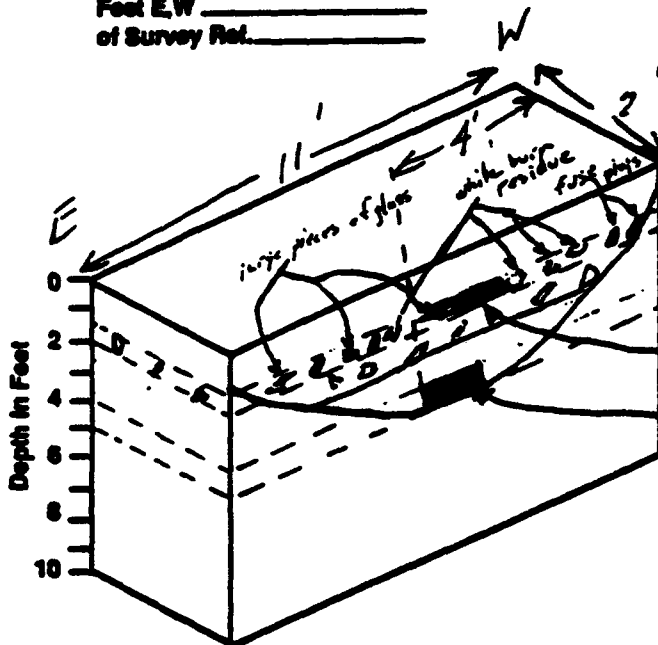
**TEST PIT EXCAVATION LOGS**

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Obldn Area D.C. Krupicka / Z.F. Herbert  
 TEST PIT LOG: TP EP-01-001  
 DATE EXCAVATED: 5-24-72  
 TIME EXCAVATION BEGAN: 0815  
 WEATHER CONDITIONS: Overcast, ~60° F, Slight S-W winds  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Orientation = E-W  
 Total Depth = 5'  
 Length = 11'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plant.)	VOC METER READING
EP-01-001	1.5-2'	SM	Dark brown (7.5 YR, 7/3) silty sand with 30-40% fines, less than 10% gravel subrounded to angular, very fine to medium surrounded well graded sand, nonplastic, dry, loose.	0.1 ppm
EP-01-001	4-5'	SP	Pale brown (10 YR 4/3) poorly graded sand with no gravel, less than 10% silt, moist, nonplastic, loose, very fine grained surrounded sand.	0.1 ppm

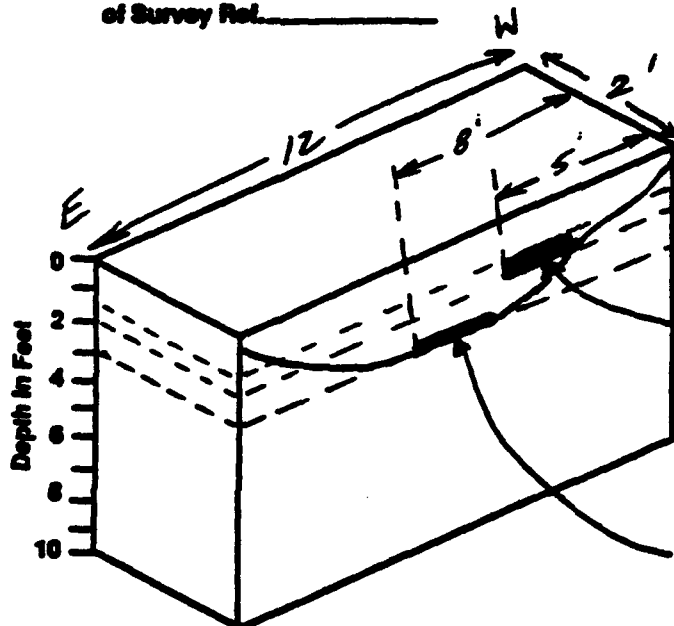
Booths 001, A2  
 Comment: Booth bucket Sample EP-01-001-2 contained large pieces of glass, brackets of bomb fins, white residue probably from burnt magnesium or aluminum (very), fine well plys of 500 lb bombs (VLD), abundant oxidized orange stains.  
 Excavated 001, A2  
 Enclosed underneath debris and yet into undisturbed sand below 3 feet. No evidence of debris or burning from 3 to 5 feet

TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 DE. Krupicka / R.E. Hurlbert  
 TEST PIT LOG: TP EP-01-002  
 DATE EXCAVATED: 5-29-92  
 TIME EXCAVATION BEGAN: 1045  
 WEATHER CONDITIONS: overcast ~ 65° F, S-10 mph SW winds  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N/S \_\_\_\_\_  
 Feet E/W \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Orientation = East - West  
 Total Depth = 3'  
 Length = 12'

Sample EP-01-002-2'

Sample EP-01-002-3'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-002	2'	SM	Dark yellowish brown (10YR 3/4) silty sand with 15 to 20% fines, no gravel, nonplastic, slightly cohesive, subrounded, poorly graded sand	0.1
EP-01-002	3'	SP-SM	Brown to dark brown (10YR 4/3) poorly graded sand with silt, less than 10% fines, no gravel, subrounded very fine to fine sand, moist, nonplastic, loose to slightly cohesive, no bedding.	0.1

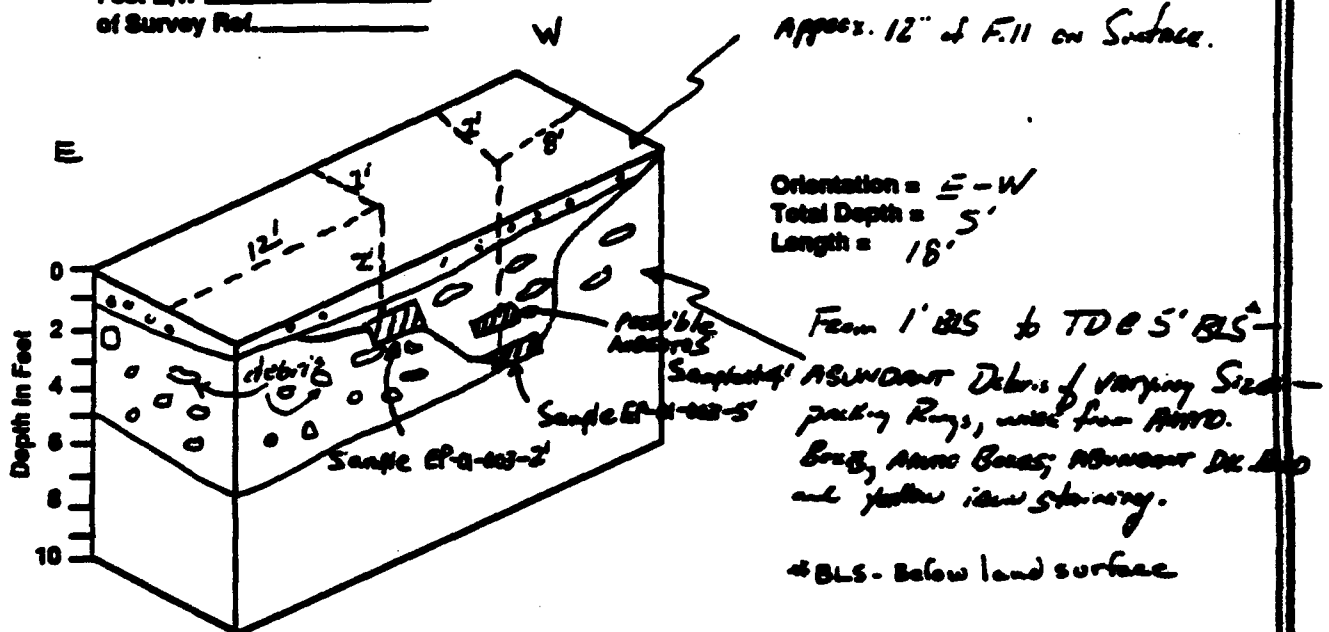
Comment:

No evidence of debris or burning.

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Karpala / R.E. Harbert  
 TEST PIT LOG: TP EP-01-003  
 DATE EXCAVATED: 30 May 1992  
 TIME EXCAVATION BEGAN: 0830  
 WEATHER CONDITIONS: Clear, Breezy, Sun South  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. 2'  
 Feet E.W. 16'  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-003-2'	2' BLS	SP-SM	Dark yellowish brown (10 YR 3/4) partly graded silty sand with less than 10% fine gravel, 10% fines, dry, non-low plasticity, low consistency, loose, & subangular fine sand.	<0.1 ppm
EP-01-003-5'	5' BLS	SM	Very dark brown (10 YR 2/2) silty sand with less than 10% fine gravel, 15% to 20% fines, moist, low to low plasticity, low consistency, loose, subangular fine sand.	<0.1 ppm
ASBESTOS(?) - fibrous white material				

Comment: Below 2 feet below ground surface, evidence of burning. Items encountered include <sup>2006-5-92</sup> iron slag, bomb tail fin rings, 20 mm ammunition can, 50 caliber ammunition can, fabricated burn pan, support rods, packing rings, wire off ammo boxes. Orange-red oxidation stains from 2 feet to 5 feet bgs.

At 4 feet below ground surface, encountered fibrous object, possibly asbestos. Metal pipe at 9.5 feet may have had asbestos wrapping.

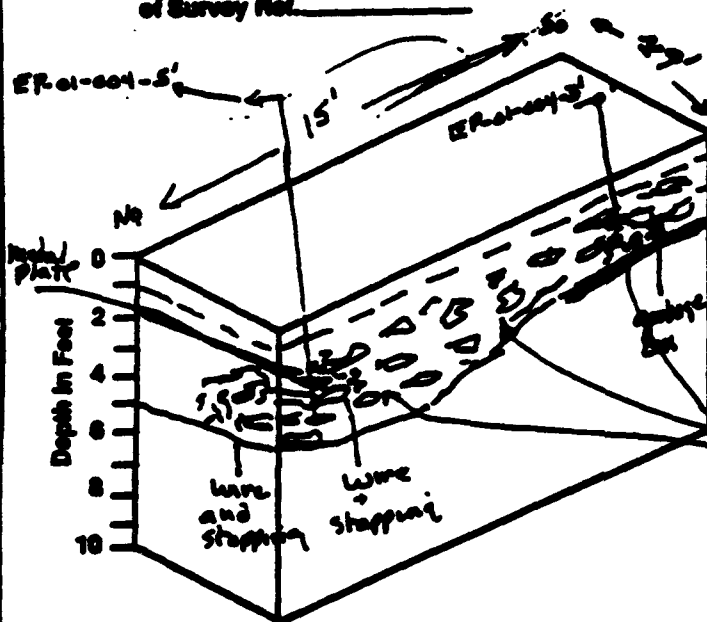
TEADN PHASE I RFI APR 5-20-92

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO: EP-01-004 SWMU-1 Main Demolition D.C. Kopala/R.F. Harbott  
 TEST PIT LOG: TP EP-01-004  
 DATE EXCAVATED: 5-24-92 3:30-4:22  
 TIME EXCAVATION BEGAN: 10:45  
 WEATHER CONDITIONS: Sunny 5-10 MPH breeze from East, slightly cloudy  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



0 to about 1 ft down (10yr 26)  
 dry silty clay or clayey silt w/sand  
 (ml-s) med stiff, med plastic,  
 about 20 to 30% sand, 4 to 6%  
 sand.

Orientation = N-S  
 Total Depth = 4.5-5.0'  
 Length = 15'

Buried metal plate  
 Very large, could not  
 remove w/back hoe

Comment:  
 Abundant charcoal and oxidized  
 debris - throughout debris zone  
 in pit. Debris extends > 5' below  
 around surface (total depth of pit)

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plant)	VOC METER READINGS
EP-01-004.3'	3'	ML	Brown (10yr 26) sandy silt with less than 10% gravel and some clay (ml) Dry-moist, low plasticity, low plasticity, low consistency, loose, and fine poorly graded subangular sand.	0.1 ppm
EP-01-004.5'	5'	SM	Dark yellowish brown (10yr 26) silty sand with less than 15% fines, 0% gravel Dry-moist, low plasticity, low consistency, loose, subangular - fine sand, poorly graded.	0.1 ppm

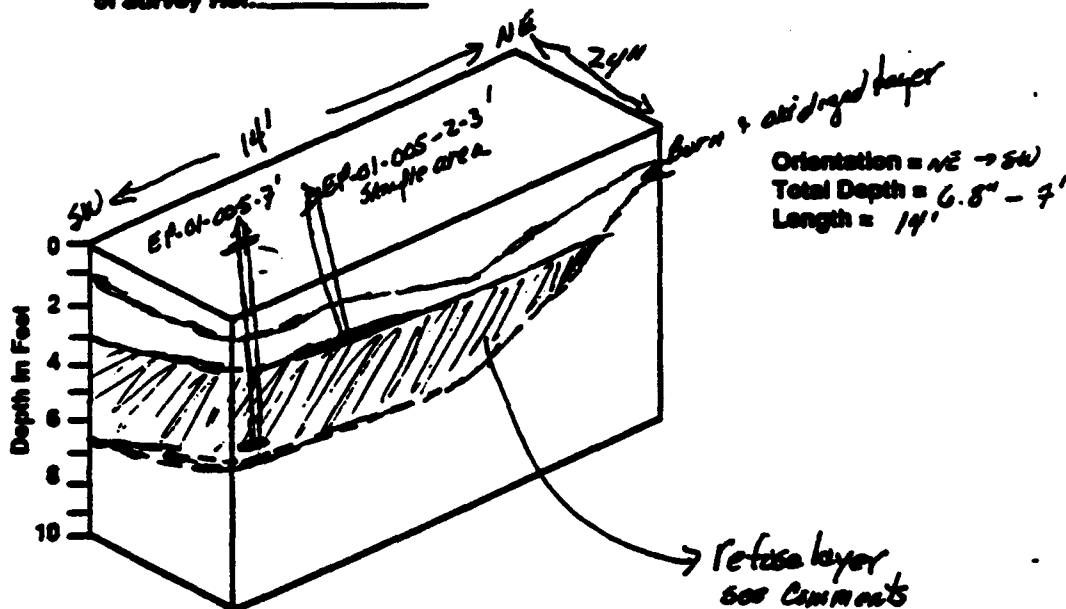
Comments: At approx. 12-14 inches below the ground surface hit refusal, large metal plate. Moved the back hoe north of the northern edge of pit and tried to excavate around it. Still refusal, moved north with back hoe and lifted a large metal plate out of pit. Final depth of pit at the northern end was 4.5 to 5 feet deep. It appears the trench was covered with metal plates then back filled. A lot of random debris, evidence of burning, 2.5" rocket containers, possible rifle grenade containers, banding material, ammo case wire, solvent can, trash can (5 gal) and bare protection.

TEAD-N PHASE I RFI ring 1000 lb new style bomb.

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition D.S. Kuyper/R.F. Harbert  
 TEST PIT LOG: TP EP-01-005  
 DATE EXCAVATED: 5-30-92  
 TIME EXCAVATION BEGAN: 1345  
 WEATHER CONDITIONS: June 5-10 mph east wind, slightly cloudy  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (L)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-005-2-3'		SP-SM	Very dark brown (10YR 2/2) poorly graded silty sand with less than 15% fines, 0% gravel, dry, non-plastic, low compressibility, loose, subround-subangular very fine-fine sand	<0.1 ppm
EP-01-005-7'		SM	Dark brown (7.5YR 3/5) silty sand with 15-20% fines, 0% gravel, dry, non-plastic, loose, subround, fine to coarse but mostly fine sand.	<0.1 ppm

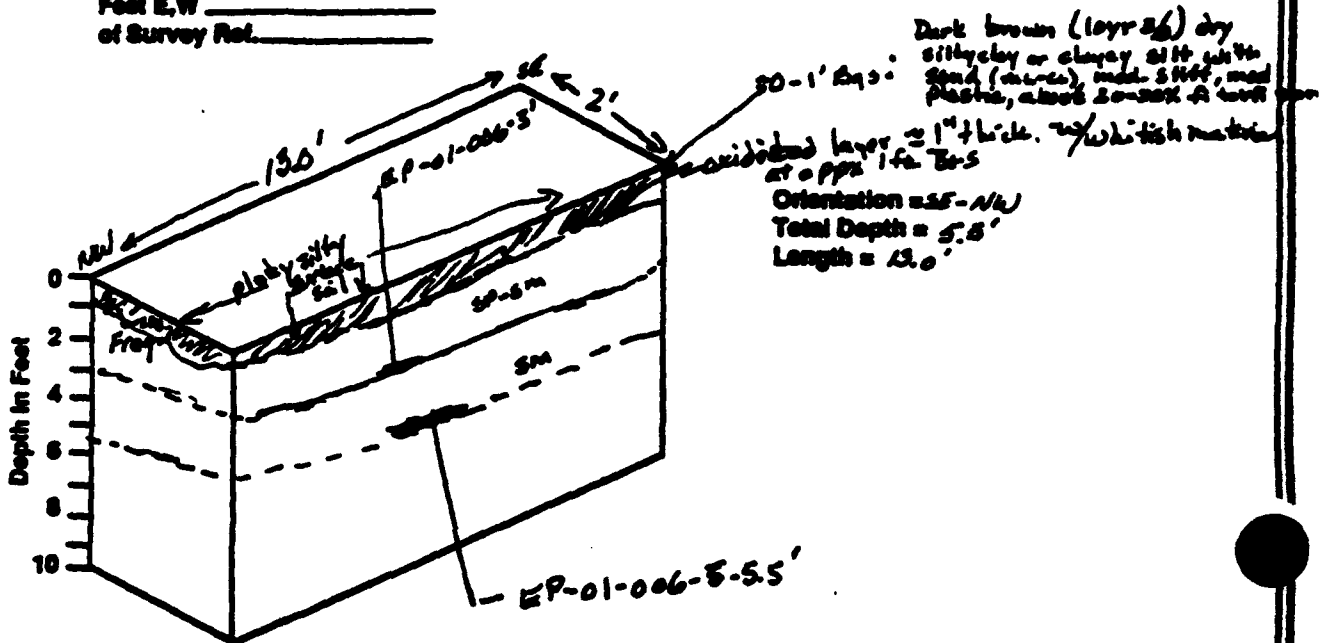
Original location of this pit found buried drums, pulled lid off one w/ pack her breakfast. Covered it & moved to the N.E. The drums @ 2 ft bps. Took a photo of 10 full ft. drum covered with approx 1 ft of soil.  
 Comment: Evidence of burning, dk blk to grey colored material, 60mm mortar, handles to ammo boxes, 50 caliber machine gun round, 75mm M-38A-1 rocket, pieces of I beam, McLeod conveyor, patches hat (the fox and of projectile), electrical conduit, filter, 55 Canister, 8" can lid, 55 mm mortarless rifle cartridge case, and tubes for "Regolith" projectile pellets, 105mm can lid mm shell

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition D.C. Kuyala / R.F. Harris  
 TEST PIT LOG: TP EP-01-006  
 DATE EXCAVATED: 5-30-92  
 TIME EXCAVATION BEGAN: 1505  
 WEATHER CONDITIONS: Sunny, variable 5-10 MPH winds, slightly cloudy  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-006 - 3'		SP-SM	Dark yellowish brown (10YR 2/4) poorly graded silty sand with 5-12% fines, 0% gravel, dry, low plasticity, low consistency, loose, subrounded, very fine to fine sand	0.1 ppm
EP-01-006 5-5.5'		SM	Light yellowish brown (2.5 YR 4/6) silty sand with 15-20% fines, 0% gravel, dry, non-plastic, low consistency, loose, subrounded, very fine to fine sand	0.1 ppm

Comment:

No evidence of burning or debris below 1 foot. Some minor fragments observed probably migrated from the surface.

END



TEAD-N PHASE I RFI

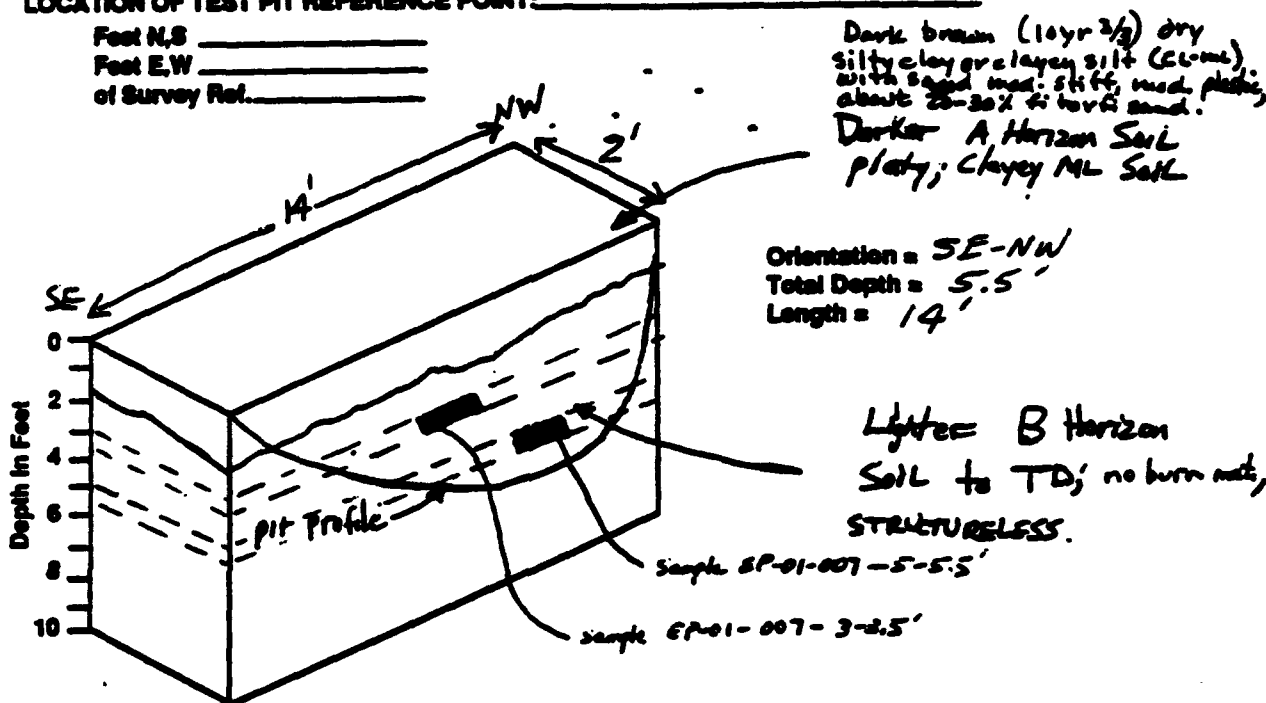


# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 P.C. Krupicka and R.F. Herbert  
 TEST PIT LOG: TP EP-01-007  
 DATE EXCAVATED: 5-30-92  
 TIME EXCAVATION BEGAN: 12:55  
 WEATHER CONDITIONS: Sunny, 5-10MPH variable winds, partly cloudy  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % fl, moisture, plastic)	VOC METER READINGS
EP-01-007-3'-3.5'		SM-ML	Light yellowish brown (2.5YR 4/3) sandy silt with 5-10% clay, approximately 50% very fine sand, less than 5% gravel, dry, plasticity 6-8, low to medium plasticity, low compressibility, moderately cohesive, subrounded sand	0.1 ppm
EP-01-007-5'-5.5'		SM-ML	Light yellowish brown (2.5YR 6/3) sandy silt with 5-10% clay, approximately 50% very fine sand, less than 5% gravel, dry, plasticity 6-8, low to medium plasticity, low compressibility, moderately cohesive, subrounded sand	0.1 ppm

Comment: NO EVIDENCE of Previous Disposal/Burn Activities.

PROJECT NO. 2942.0120

JME



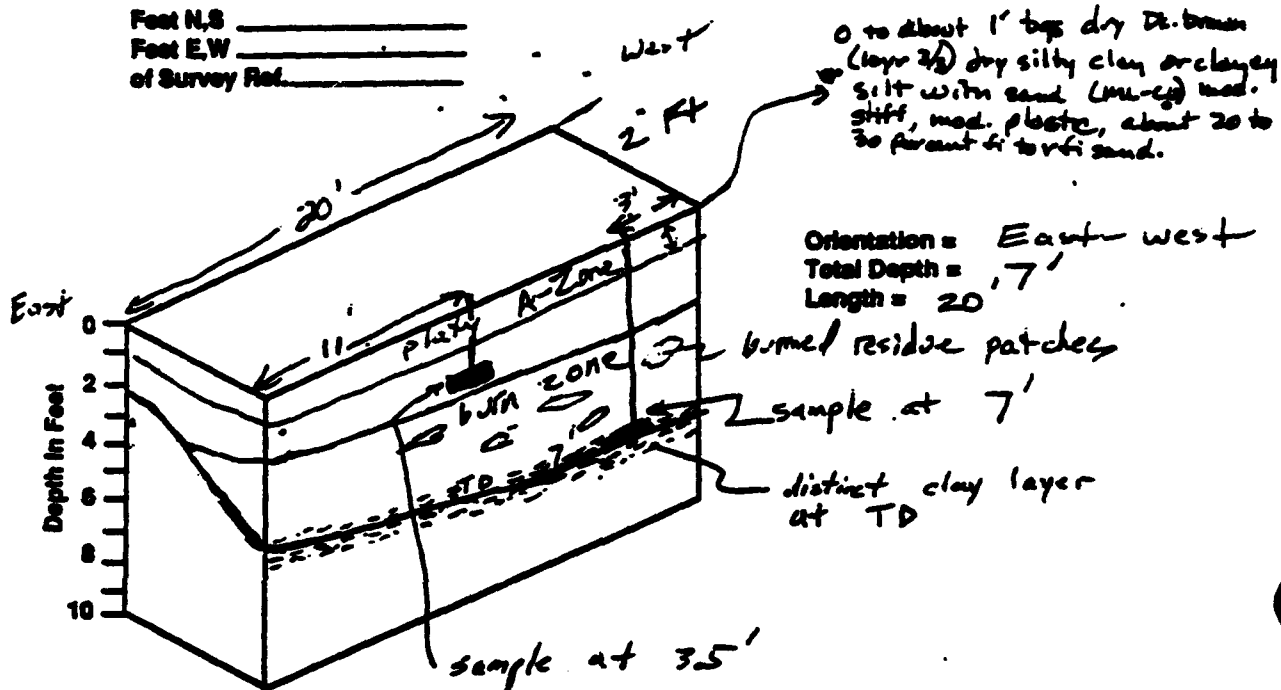
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demo P.C. Krupicka/RE Harkit  
 TEST PIT LOG: TP EP-01-008  
 DATE EXCAVATED: 5-31-92  
 TIME EXCAVATION BEGAN: 0920  
 WEATHER CONDITIONS: Sunny, slight NE breeze  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N/S \_\_\_\_\_  
 Feet E/W \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-008-3'-3 1/2'		SM-ML	Very dk. Brown (10 yr 2/4), moist, non-plastic Silty Sand w/20% fine to med. Gravel and 15% fines. Soft, Loose; sub-rounded grains.	.00 ppm
EP-01-008-7'		CL-ML	Lt. yellowish Brown (2.5 y 4/4) moist, stiff, Sandy Silty Clay with ~20% fine to very fine Sand, sub-rounded. med. G. to heavy plasticity. stiff	.00 ppm

Comment:

First foot is platy A zone

At 3.5' BGS encountered burn zone - 37 mm shell (crusks), gr on A-Z T- Valve, insect. short metal + channel iron, piece of 55-gal. Drum, abundant burn slag.

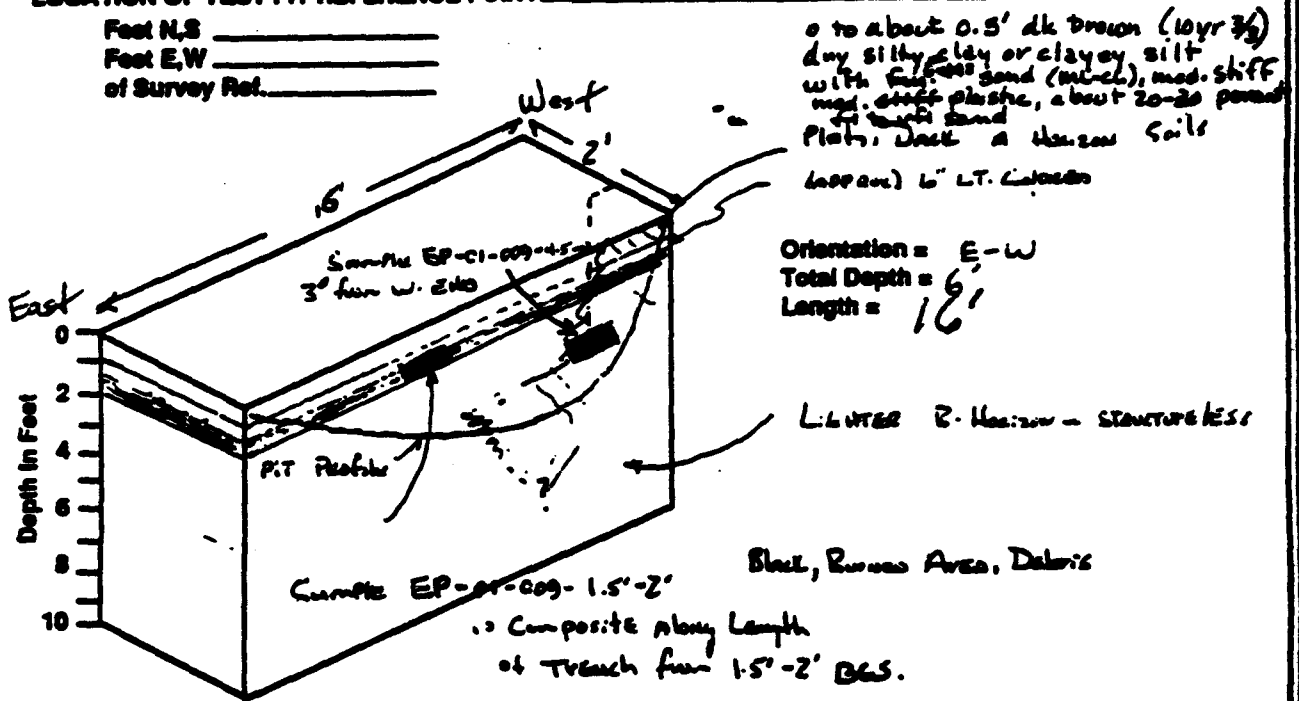
At 7' encountered distinct clay layer. distinctive Light Blue/Grey TEAD-N PHASE I RFI (SY 7/1).

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demo. Dr. Kripick/R.F. Heibert  
 TEST PIT LOG: TP EP-01-009  
 DATE EXCAVATED: 5-21-92  
 TIME EXCAVATION BEGAN: 1:00  
 WEATHER CONDITIONS: Clear & sunny, T=10 mph N-N-E  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % f, moisture, plast)	VOC METER READINGS
EP-01-009-1.5'-2'		SM	Dark brown (10YR 3/5) silty sand with gravel, dry, nonplastic, loose, soft, subangular-subround f and 20% fines 20% subrounded fine gravel	0.00 ppm
EP-01-009-4.5'-5.5'		SM	Black (10YR 2/1) silty sand with gravel with 30% fines, 15% fine to medium gravel, moist, stiff, moderately plastic, subangular to subrounded very fine to fine sand	0.00 ppm

Comment: Debris encountered 1' BGS: chain, steel plate, angle iron, pipe fittings, deteriorated aluminum as white-bluish oxidized aluminum screens; From 2-5' BGS machine shop refuse such as metal plates, deteriorated aluminum screens,

fine

f = fine  
 v = very fine  
 m = medium

BGS: Below ground surface



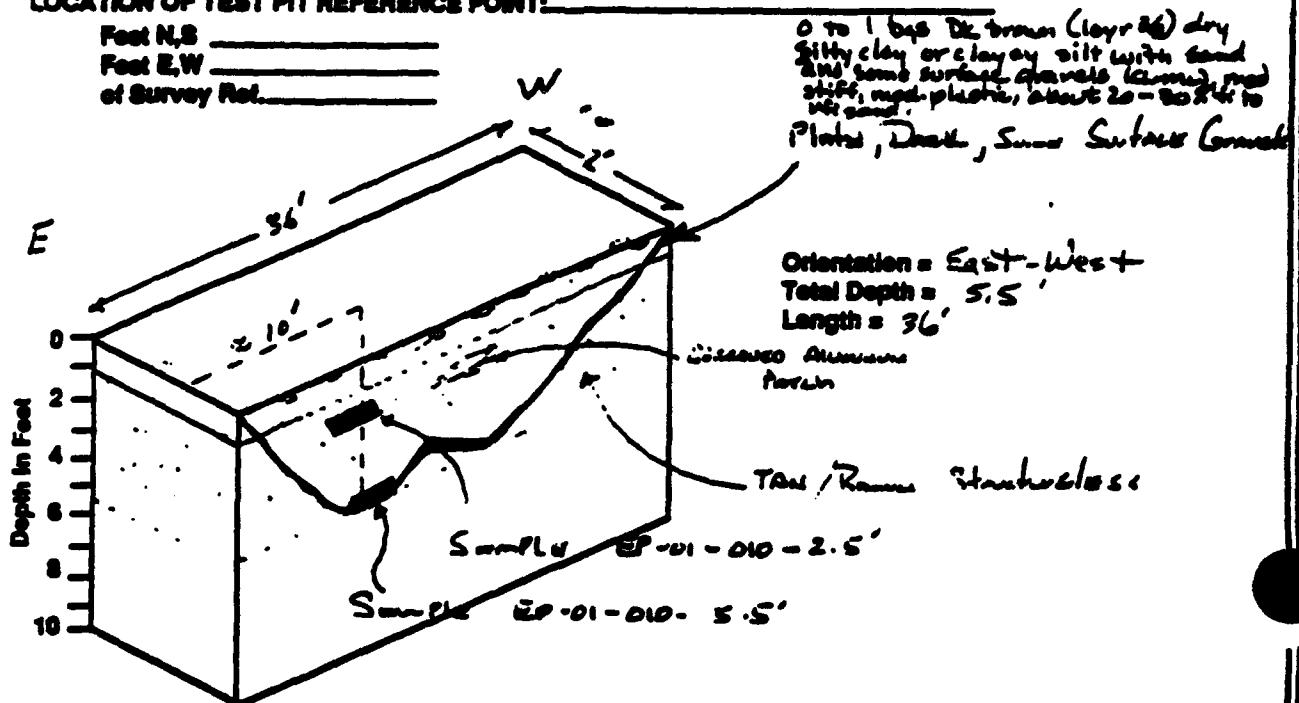
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition P.C. Kopycky / P.F. Herbert  
 TEST PIT LOG: TP EP-01-010  
 DATE EXCAVATED: 5-31-92  
 TIME EXCAVATION BEGAN: 1:15  
 WEATHER CONDITIONS: Clear 80-85° F., mod. SE breeze from North.  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-010-2.5'		ML	Very Dr. Grayish Brown (10YR 3/2), dry, med stiff, low to med plasticity, SILT w/ SAND. Fines = 50%-60%, w/no Gravel.	0.00 ppm
EP-01-010-5.5'		ML	Dark Brown (10YR 3/3), med stiff, moderately stiff s. H w/no gravel and 10%-30% very fine sand, 60%-70% fines. Low plasticity.	0.00 ppm

Comment:

NO major Debris found in trench - some minor oxidized  
 aluminum debris - mostly Tan to White Ash.



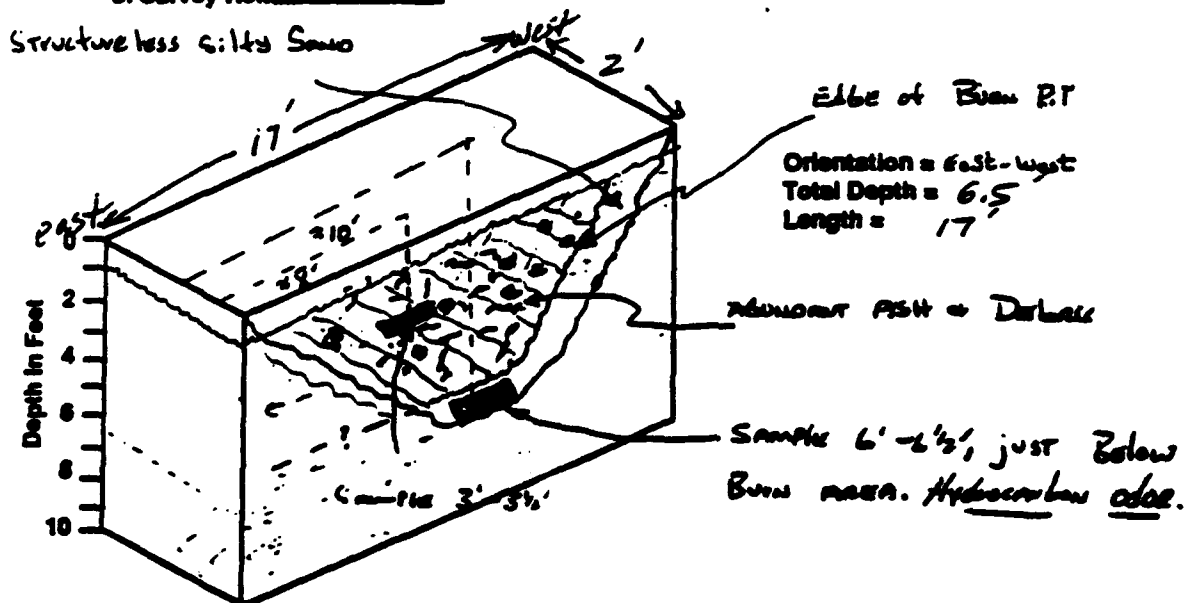
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition DC. Kipity/RF. Hester  
 TEST PIT LOG: TP EP-01-011  
 DATE EXCAVATED: 5-31-91  
 TIME EXCAVATION BEGAN: 1445  
 WEATHER CONDITIONS: Clear 80-85°F, 10-15 mph NE winds  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-011	3.5'	ASH +	* Very dark gray ash (15% s/s) in burn zone containing white, blue, black, orange burn products. No mineral soil present to classify.	0.0 ppm
EP-01-011	6-6.5'	SM	Yellowish Brown (10% s/s) moist, non-plastic silty sand; < 20% fines, No gravel. Loose; <u>Consolidates</u> <u>on 0.1% shear</u> <u>water when water.</u>	6.4 ppm

Comment: ABUNDANT Burn Debris:  
ASH, Antler, & Rubber  
Fires, Pretty Can lids,  
Bolts, & miscell.

PROJECT NO. 2842.0120

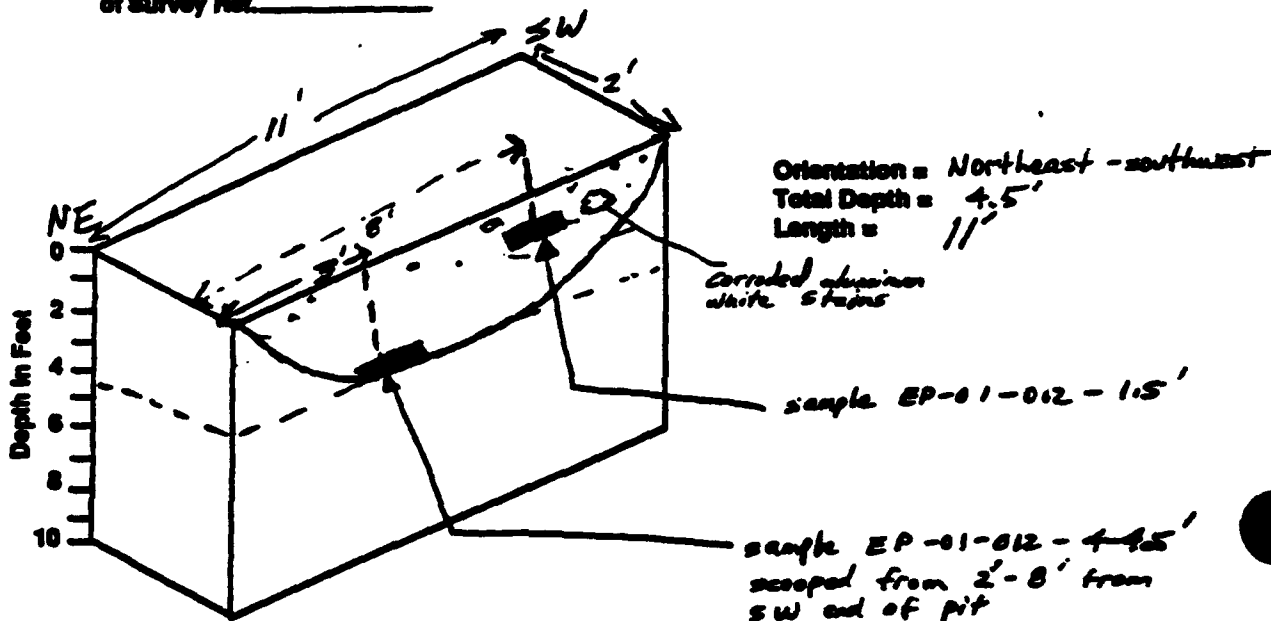
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition ac. Karpika / R.E. Hirsch  
 TEST PIT LOG: TP EP-01-012  
 DATE EXCAVATED: 5-31-92  
 TIME EXCAVATION BEGAN: 1610  
 WEATHER CONDITIONS: CLOUDY 5-10 mph NE Winds  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % s, moisture, plast.)	VOC METER READINGS
EP-01-012-2'		ML	Dark Grayish Brown (10N2 4/2), clay, Silty Silt, 50% - 60% fines, w/lt gravel. Fine to Very fine Sand; Low to Med. Plasticity, w/med. stiffness. pebbly - Gravel, Sub-Round	0.00 ppm
EP-01-012 4-4.5'		CL-ML	Light yellowish brown (2.5YR 4/2), med, silty clay with 15% very fine, 20% subrounded sand, no gravel. Low to moderate plasticity, moderately stiff to stiff.	0.00 ppm

Comment: At 1.5' below ground surface observed white patch, probably corroded aluminum. Also, scattered orange oxidation stains from 0.5 to 1.5' deep

PROJECT NO. 2042.0120

JME



TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Driv. D.C. Krupick / R.F. Herbst  
 TEST PIT LOG: TP EP-01-C13  
 DATE EXCAVATED: 1-1-92  
 TIME EXCAVATION BEGAN: 0845  
 WEATHER CONDITIONS: 100% sunny, winds 15-20 mph SW  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

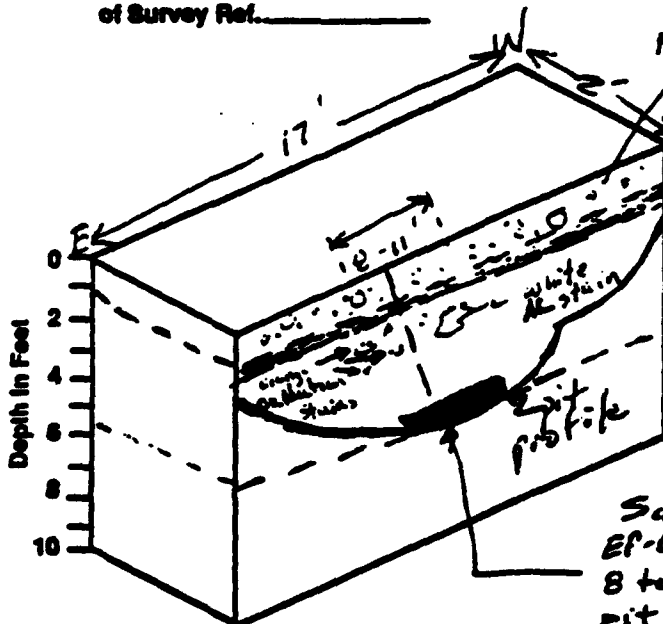
Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

0 to about 1' - bas. dk brown (10yr 5/4) dry silty clay or clayey silt with sand (mu-cl) med. stiff, mod. ? plastic.

platy soil mixed with fine to medium subangular to subrounded gravel

ash layer - EP-01-013-1' sample taken along pit length at 1'

Orientation = E-W  
 Total Depth = 5.5'  
 Length = 17'



Sample EP-01-C13-5.5' scoop scooped from 8 to 11 feet from East end of pit from 4.5 to 5.5 deep.

SAMPLE NO.	SAMPLE LOCATION (ft)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plant)	VOC METER READINGS
EP-01-013	1'	Ash	Black (2.5Y 2/0) Ash layer of burn zone with 30-40% fine to medium gravel subangular to subrounded. No native soil to classify due to burning.	0.2 ppm
EP-01-013	4.5-5.5'	SM-ML	Yellowish brown (10YR 5/4) soft, nonplastic, loose, 30-40% fines, subangular-subrounded fine sand in silty sand - <del>slightly</del> no gravel 260-6-1-2	0.0 ppm

### Comment:

Encountered ash zone at 1' BGS mixed with fine to medium gravel. Ash layer only 6 inches thick.

Below 1' to 2.5', variably mixed orange oxidation stains and one white patch of aluminum corrosion. Below 2.5' no evidence of contamination visible.

PROJECT NO. 2842.0120

TEAD-N PHASE I RFI

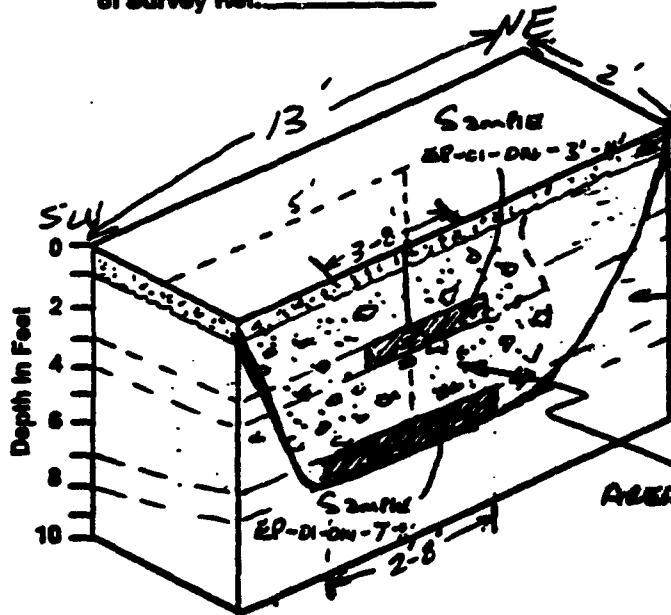
# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Karpicki / R.E. Herbert  
 TEST PIT LOG: TP EP-01-04  
 DATE EXCAVATED: 6-1-72  
 TIME EXCAVATION BEGAN: 1145  
 WEATHER CONDITIONS: Clear, 75°F, 5-15 mph Breeze from N.  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

0-1 ft. bgs dk brown (gray) dry silty clay or clayey silt with sand and gr. (muc. cl), mod. stiff, mod plastic & tort. Surface to 1' BS: Dry, platy, well-sorted gravel.



Orientation = SW - NE  
 Total Depth = 8'  
 Length = 13'

1' BS to TD = CL-ML, DK. Brown silty clay w/ sand.

AREA of Run Pit / Drain Pit

SAMPLE NO.	SAMPLE LOCATION (RL)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-04-3'-4'		CL-ML	Dark Brown (7.5YR 3/2), WET, STIFF, MOD. plastic silty clay with sand; with 20% fine to very fine sub-rounded sand, poorly graded. Moderate medium carbon bits.	0.00 ppm 0.3 ppm
EP-01-04-7'-8'		CL-ML	Dark Brown (7.5YR 3/2), WET, stiff, low plasticity silty clay w/ 50% fine to very fine, poorly-graded, sub-rounded sand. Less clay than 3'-4'.	0.1 ppm

Comment: Fuses and metall. Metal debris. Soil contains abundant oxidized metal bits; (files, etc.); small Camsters, Brass residue (Br), and M19-17 Time Rings for powder - Train Fuses.

NOTE

grs gravel  
 f = fine  
 v = very fine sand



TEAD-N PHASE I RFI

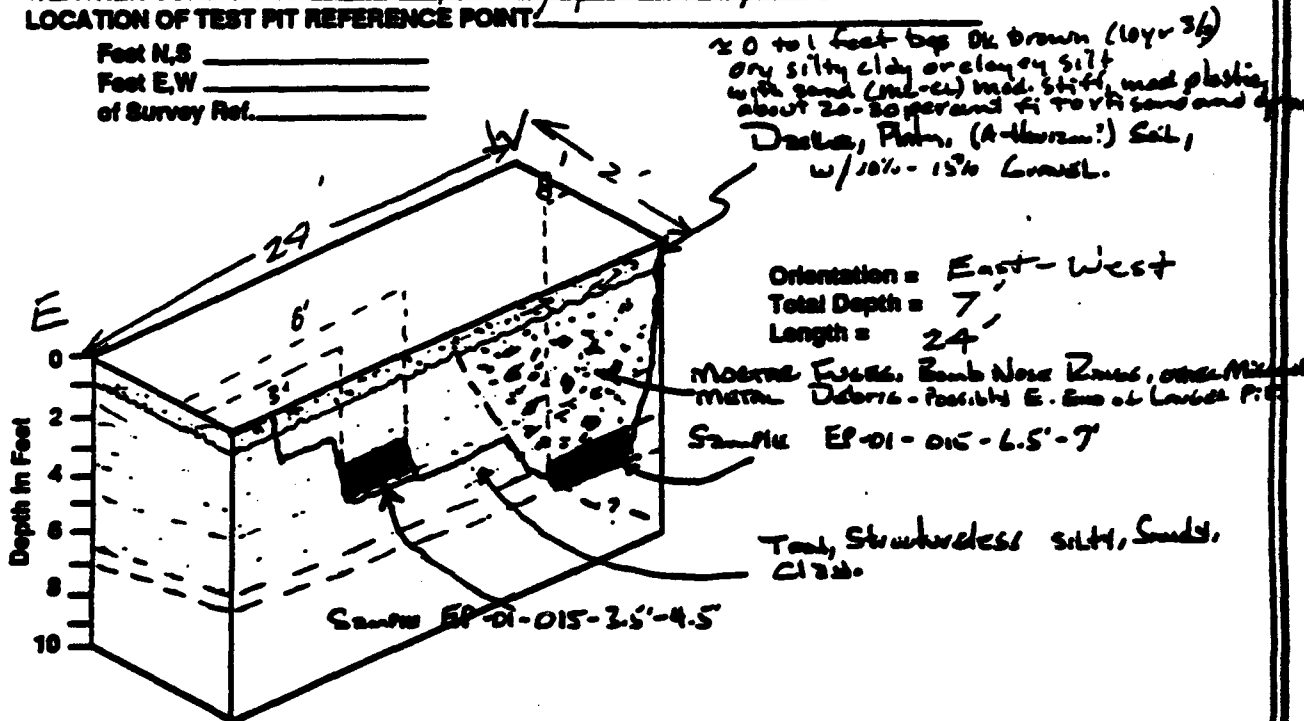


# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition D.E. Krupka/B.E. Heister  
 TEST PIT LOG: TP EP-01-015  
 DATE EXCAVATED: 6-1-92  
 TIME EXCAVATION BEGAN: 1322  
 WEATHER CONDITIONS: clear, sunny, 5-16 mph wind from NE  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % s, moisture, plast.)	VOC METER READINGS
EP-01-015-3.5'-4.5'		CL-ML	Light yellowish brown (10YR 4/4) silty clay with 15% very fine, poorly rounded sand, moist, medium plasticity, moderately stiff, moist, no gravel. Orange iron oxidized fragments abundant in sample bowl.	0.1 ppm
EP-01-015-6.5'-7'		CL-ML	Light olive brown (2.5Y 5/6) silty clay w/ 15% - 20% Very Fine grained Sub-Rounded Sand. No gravel. Moist, med. plasticity, med. STIFF. Some poorly Grained; some oxidized particles.	0.1 ppm

Comment:

No ashes or evidence of burning. Orange oxidations stains are scattered on pit walls and appear to have been buried evidence probably burned chambers.

Items encountered include 82 mm mortar fuses, bomb nose plugs, and cluster bomb fuse plates. Also unidentifiable decomposed ordnance.

PROJECT NO. 20-20120

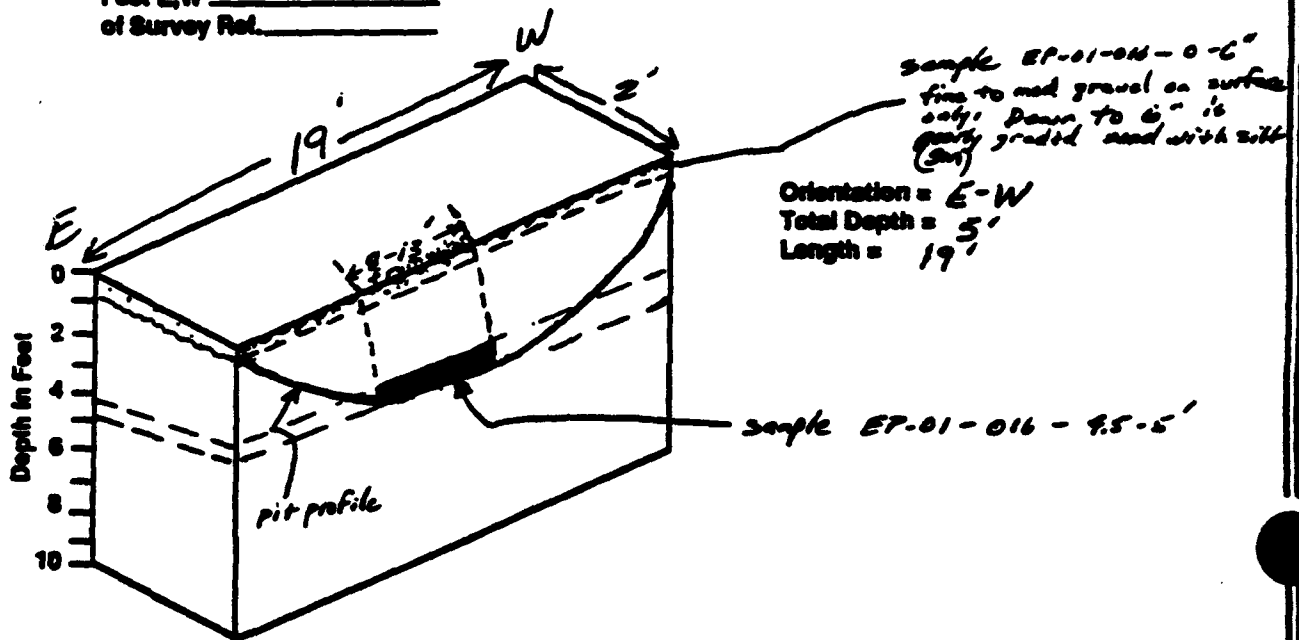


TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka/P.F. Herbert  
 TEST PIT LOG: TP EP-01-016  
 DATE EXCAVATED: 6-1-92  
 TIME EXCAVATION BEGAN: 1630  
 WEATHER CONDITIONS: clear, sunny, winds E mph NE  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-016 - 0-6"		OS 6-11 Sp-Sm	Grayish Brown (10% 1/2) poorly-graded sand with silt; low to moderate plastic, moderately stiff, sub-rounded. 30% fines, no gravel.	0.1 ppm
EP-01-016 - 4'-5"		ML	White-olive brown (2.5Y 5/6) Sandy S.L.T w/ 10% Clay no gravel. Low plasticity, moderately stiff. 25% VERY FINE sub-rounded Sand, poorly-graded.	0.2 ppm

Comment:



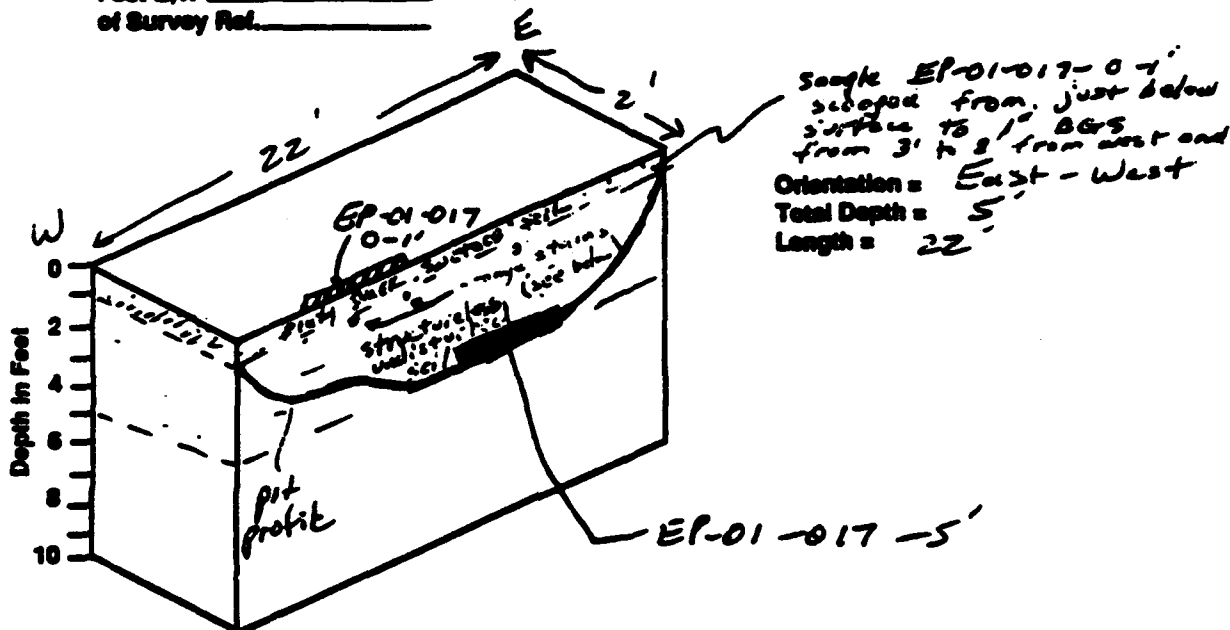
No evidence of burning, buried debris.

TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / R.E. Hecker-1  
 TEST PIT LOG: TP EP-01-017  
 DATE EXCAVATED: 6-2-92  
 TIME EXCAVATION BEGAN: 0855  
 WEATHER CONDITIONS: clear, sunny, winds 10-20 mph from SW  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % s, moisture, plast.)	VOC METER READINGS
EP-01-017-0-1'		ML-SM	Brown (10% R 5/8) silty sand with 10% clay. Dry, low-moist plasticity, low-moist stiff, no gravel, subrounded very fine to fine sand, poorly graded.	Not taken*
EP-01-017-5'		SM	Light olive brown (2.5% s/s) silty sand with no gravel, low plasticity, low stiffness, subrounded fine to very fine sand, moist, poorly graded.	Not taken*

Comment:

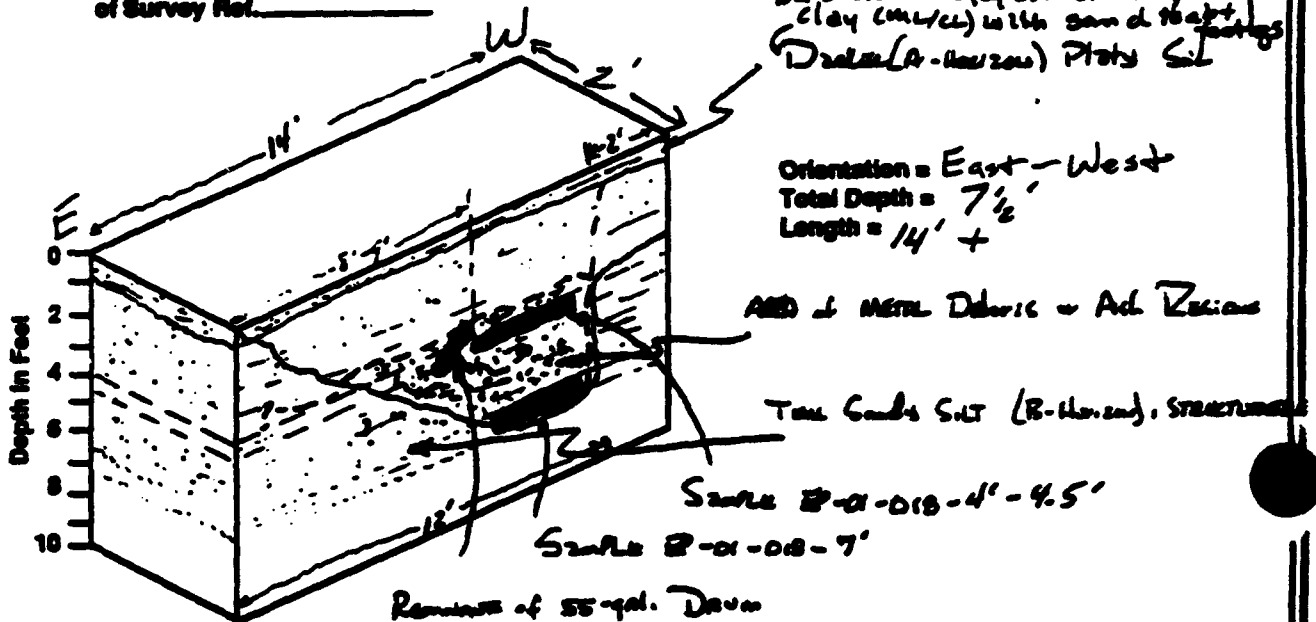
No burn debris observed. Minor spots of orange oxidation stains from 1 to 3 feet BGS. Below 3 feet structureless undisturbed soil. See sample description. \* OVM cutoff switch failed; backup OVA was in process of charging.

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Karpela / R.E. Harburt  
 TEST PIT LOG: TP EP-01-01B  
 DATE EXCAVATED: 6-3-97  
 TIME EXCAVATION BEGAN: 1130  
 WEATHER CONDITIONS: Partly cloudy, 85-90°, winds 16 mph NE  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % ll, moisture, plast.)	VOC METER READINGS
EP-01-01B-4'-4.5'		Ash/Silt	Gray Black (SY 2.5/1) moist, non-plastic Ashy Soil w/ abundant (>50%) Ash Residue. Soil Components are mostly sand-size, poorly-graded, sub-rounded. Sample pit contains 7/300000 no SD cal. Bullets.	Not Taken 0.0 ppm
EP-01-01B-6.5'-7'		Ash/Silt	Black (SY 2.5/2) moist, non-plastic Ashy Soil w/ abundant ash Residue & metal chips. Material very non-plastic - (50% + exposure to hard impact.)	0.0 ppm

Comment: EP-01-01B contains 30 cal. & 50 cal. munitions, bomb fragments, batteries, Rums, Crushed 55-gal. drum 9' from E. End of Trench, 1/2" metal Cable, other mixed. Metal/Rum Debris. Sample loads contain several 30 cal. & 50 cal. Bullets, rifle inspection w/ Hand Magnet revealed appreciable ferrous metals (ferruginous) in Sample.

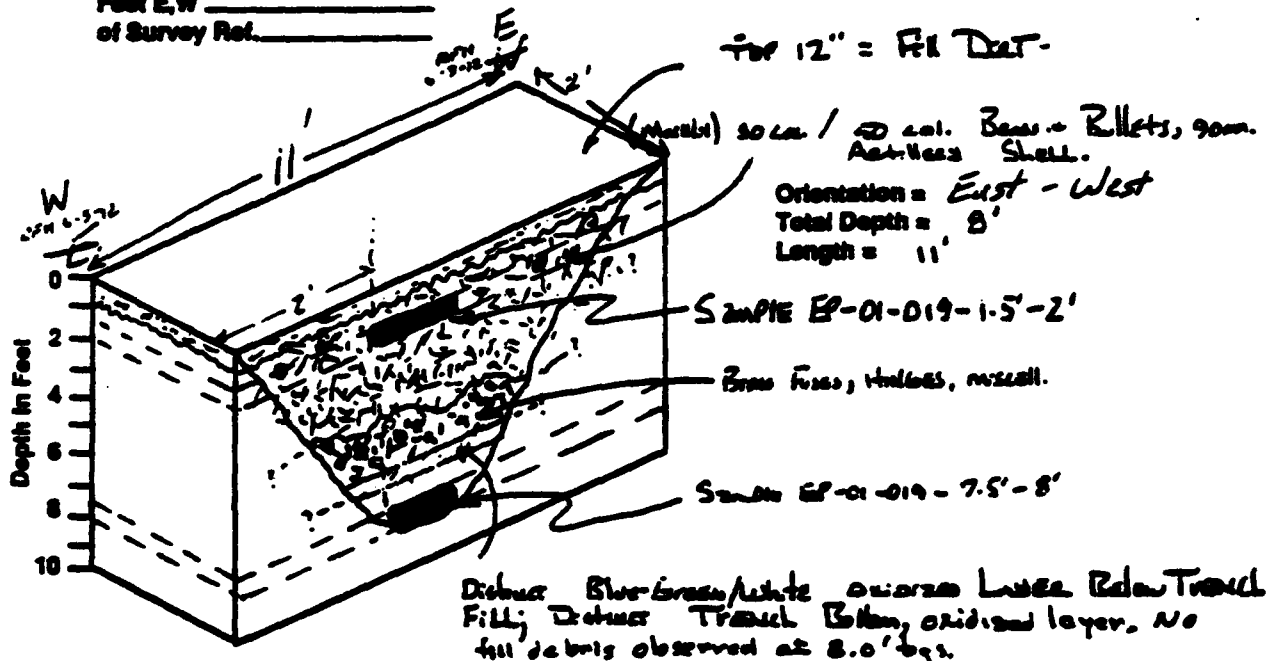
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupnick R.F. Herbert  
 TEST PIT LOG: TP EP-01-019  
 DATE EXCAVATED: 6-3-92  
 TIME EXCAVATION BEGAN: 0850  
 WEATHER CONDITIONS: Clear, 60° F, winds 10-20 mph SW  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % s, moisture, plast.)	VOC METER READINGS
EP-01-019	1.5'-2'	SM	Very dark grayish brown (10YR 2/2) silty sand with 10 to 20% fines, no gravel. Nonplastic, loose, moist, very fine to fine subrounded to subangular sand, poorly graded.	0.0 ppm
EP-01-019	7.5'-8'	SM	Brown (10YR 5/2) silty sand with 20-30% fines, no gravel. Nonplastic, loose, moist, very fine to fine, subrounded, poorly graded sand.	0.0 ppm

Comment:

Items encountered at the first sample from 1.5'-2' were 1 90 mm artillery shell, 30 and 50 mm cartridges and bullets probably discharged elsewhere then buried here

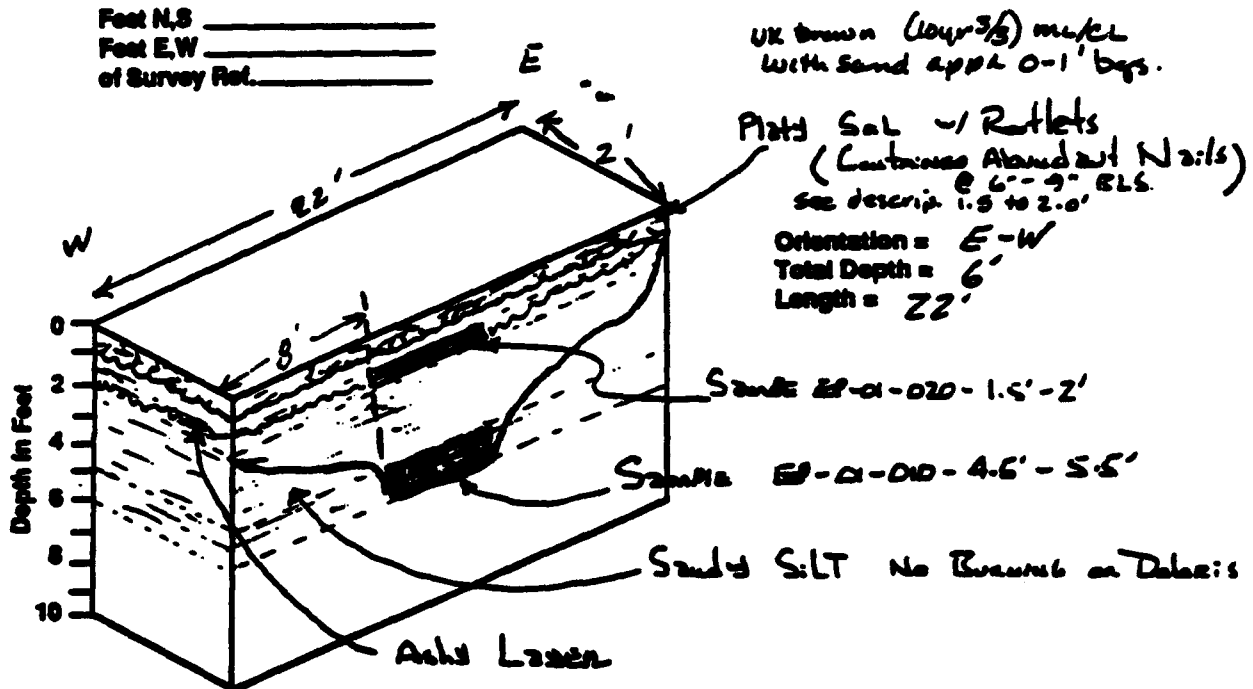
A second distinct debris zone at about 4-6 feet BGS containing brass fuses, hinges and metallic debris. Below this debris is a distinct blue-white oxidized layer about 6 to 8 inches thick. Excavated below oxidation layer and collected sample from 7.5 to 8 feet

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 2 D.C. Krupnik / R.E. Herbert  
 TEST PIT LOG: TP EP-01-020  
 DATE EXCAVATED: 6-3-92  
 TIME EXCAVATION BEGAN: 1030  
 WEATHER CONDITIONS: Clear, South Breeze 5-10 mph.  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-020-1.5'-2.6'		ML	Very Dark Grayish Brown (2.51 $\frac{1}{2}$ ), low to moderate plasticity, low to med. ST. HNESS, Sandy SILT w/ clay. Approx. 30% - 40% sub-rounded very fine to fine SAND, w/ 5% med. Sand and Silt sub-rounded fine to med. gravel. Dry.	0.0 ppm
EP-01-020-4.5'-5.5'		ML	Light Olive Brown (2.51 $\frac{1}{2}$ ) Sandy SILT with 70% fines, no gravel. 30% sub-rounded, fine to very fine poorly-sorted SAND. Low plasticity, low stiffness. Moist.	0.0 ppm

Comment: • Ash Layer @ 1.5'-2' BLS  
 • Layer of Nails at 6'-9' Below Land Surface.  
 • No evidence of Burrows or Delays, Below 2'.

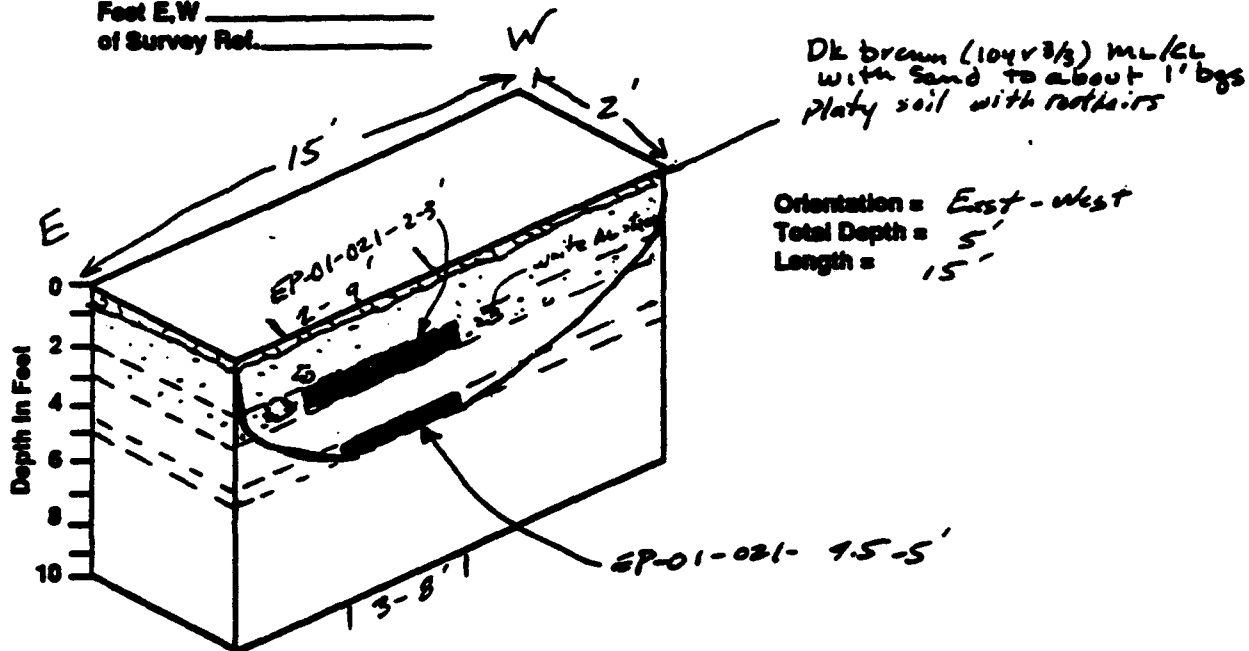


TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / R.P. Herbert  
 TEST PIT LOG: TP EP-01-021  
 DATE EXCAVATED: 2-3-92  
 TIME EXCAVATION BEGAN: 1230  
 WEATHER CONDITIONS: Clear winds 5-10 mph from NE = 80° F  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

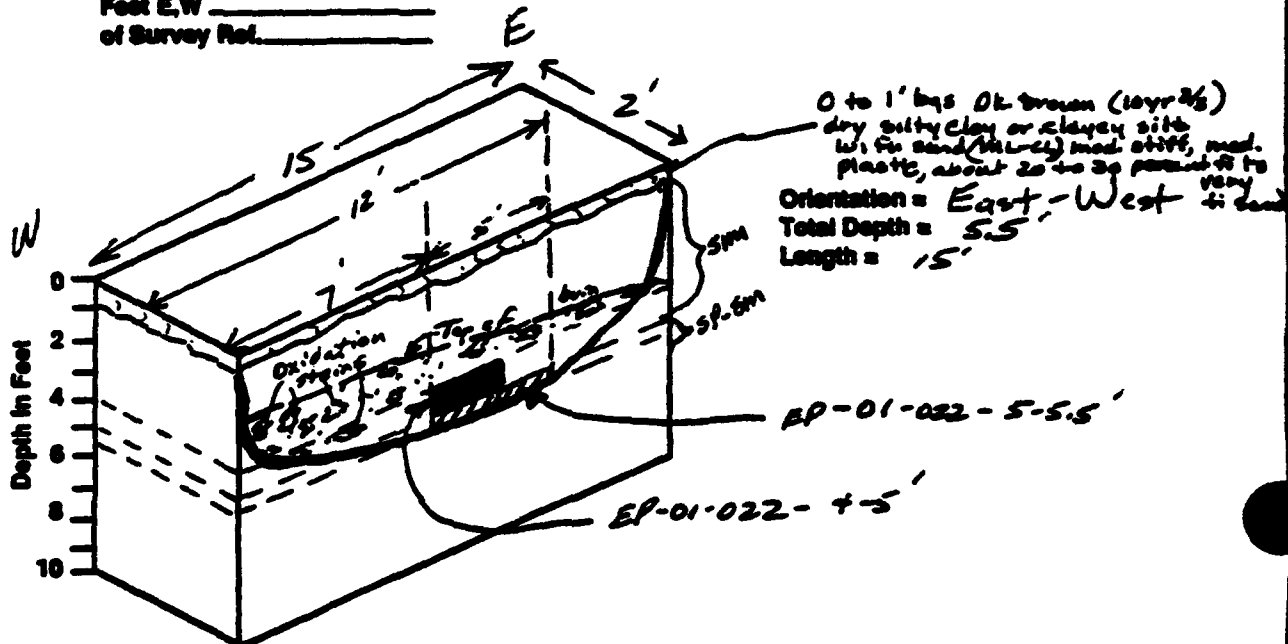


SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-021	<del>2-3</del> <u>4.5'-5.0'</u>	ML	Brown (104 v 3/3) ML/CL with sand to about 1' bgs platy soil with root hairs. Moderately plastic (Sandy Silt) with clay. 35% sub-rounded poorly-graded fine to very fine sand. Moderately about soft, 65% fines. Moist. NO gravel.	0.0 ppm
EP-01-021	<u>2'-3'</u>	SM	Dark Olive Brown (7.5 Y 3/3) silty sand with 20 to 30% fines and about 15% fine subangular to subrounded gravel. Dry, non-low plasticity, loose, fine to coarse subangular to subrounded well graded sand.	0.0 ppm

Comment: Encountered white aluminum corrosion staining from 2 to 3' BGS. Also scattered few orange oxidation stains. Below 3' BGS no debris or evidence of burning.

# **TEST PIT EXCAVATION LOG** James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / R.E. Herbert  
 TEST PIT LOG: TP EP-01-022  
 DATE EXCAVATED: 6-4-92  
 TIME EXCAVATION BEGAN: 0805  
 WEATHER CONDITIONS: Partly cloudy, 60°F, NO wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-022	4-5'	SM	Brown (10YR 5/3) moist silty sand with about 60% very fine to fine subangular to subrounded loose sand, about 30 to 40 fines, nonplastic, low stiffness, no gravel; poorly-graded sand.	0.0
EP-01-022	5-5.5'	SP-SM	Light olive brown (2.5Y 5/4) moist, poorly-graded sand with silt about 85% very fine to fine subangular loose sand, less than 15% fines, nonplastic, soft.	0.0

**Comment:**

From 3 feet to 4.5 ft, oxidized blue and white stains at and probably from brass and aluminum corrosion. This oxidized layer also contains charcoal debris and is darker and thicker towards the west end of the pit. Unidentified white-blue glossy material in very coarse gravel sizes.

No evidence of debris or burning below 5 feet

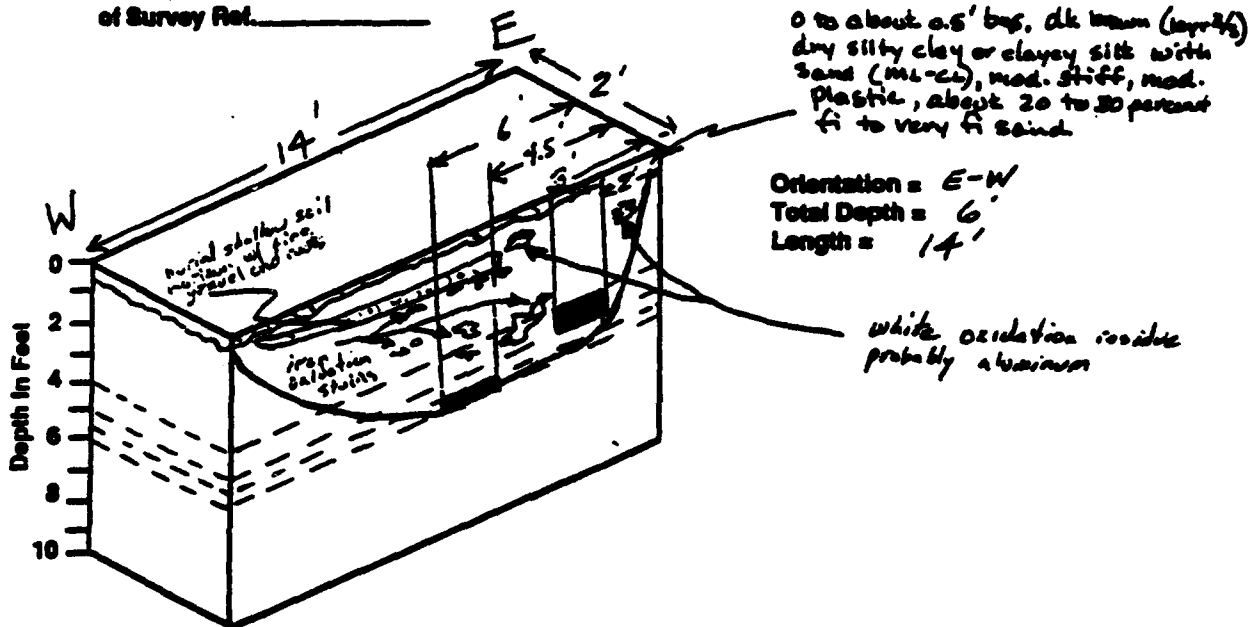
TEAD-N PHASE I RFI



# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Kravitz / R.F. Herbert  
 TEST PIT LOG: TP EP-01-023  
 DATE EXCAVATED: 6-4-92  
 TIME EXCAVATION BEGAN: 0935  
 WEATHER CONDITIONS: Clear, 75° F, Light North Breeze  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-023 - 4'-5'		ML	Light Olive Brown (2.5Y 4/2) moist Sandy Silt with about 60% fines w/ low to moderate plasticity, mod. stiff. Contains about 40% fine to very fine subrounded Sand, poorly-graded. NO gravel.	0.0 ppm
EP-01-023 - 5.5'-6'		ML	Light Olive Brown (2.5Y 5/4) moist Sandy Silt with about 60% fines w/ low to low plasticity, soft to mod. stiff. Contains about 35-40% fines to v. fine, sub-rounded Sand, poorly graded. NO gravel - estimate 25% Clay.	0.0 ppm

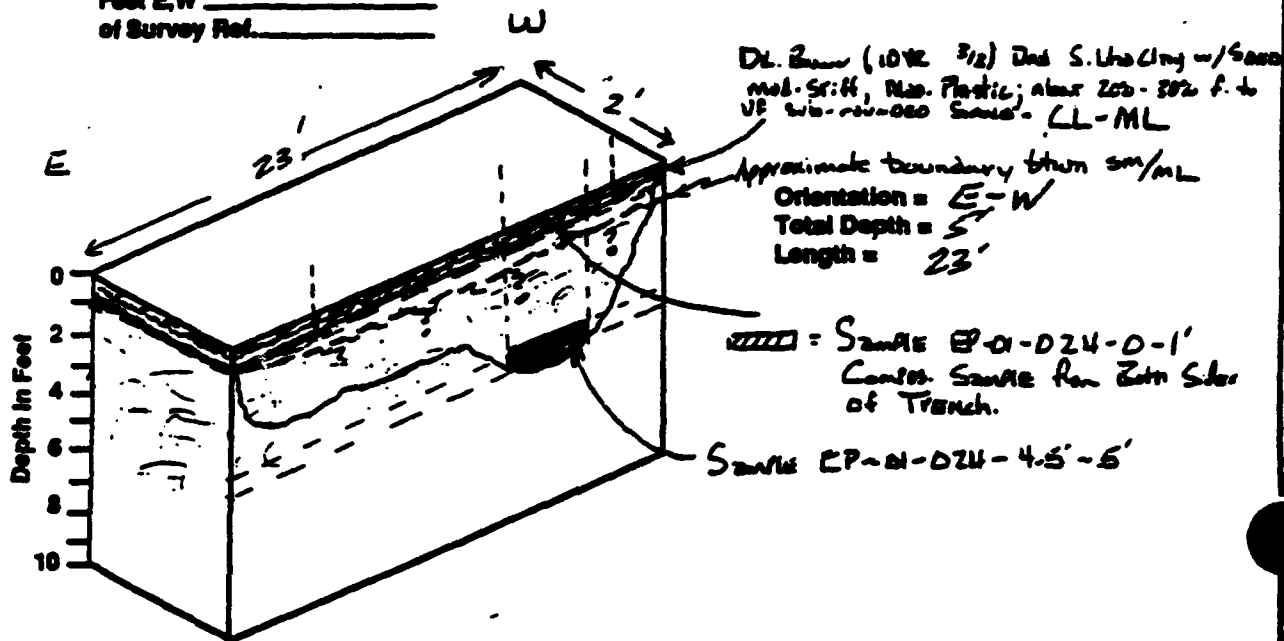
Comment:

From 2 to 3' BGS, small white oxidation stains present (2) probably from corroded buried aluminum. From 3 to 5' BGS, scattered orange iron oxidation stains with a concentrated area located about 4' from east end. NO evidence of burning or major debris. Primarily oxidation stains with some highly corroded iron fragments. Below 5', native TEAD-N PHASE I RFI soil undisturbed.

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Kuper / R.F. Habert  
 TEST PIT LOG: TP EP-01-024  
 DATE EXCAVATED: 6-9-92  
 TIME EXCAVATION BEGAN: 1210  
 WEATHER CONDITIONS: B. Cloudy, 70°F, CALM  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-024-0-1'		<del>ML</del> SM	Very dark gray (10% 3/16) silty sand with gravel, dry, about 60 to 70% very fine to fine subrounded to subangular, loose sand, 15 to 20% fines, with low plasticity, moderately stiff, 15 to 20% fine to medium subangular to rounded gravel	0.0
EP-01-024-4.5-5'		ML	light olive brown (2.5% 3/4) moist sandy silt low to moderate plasticity, moderate stiffness, about 70% fines, about 30% very fine poorly graded, subrounded, loose sand, no gravel.	0.0

### Comment:

From 3 inches below surface to 1' BGS a 1-foot thick burn zone containing charcoal fragments, fragments of highly oxidized metal both white (aluminum) and orange (iron), nails, and electrical cord.

Below 2 feet, no evidence of burning or debris.



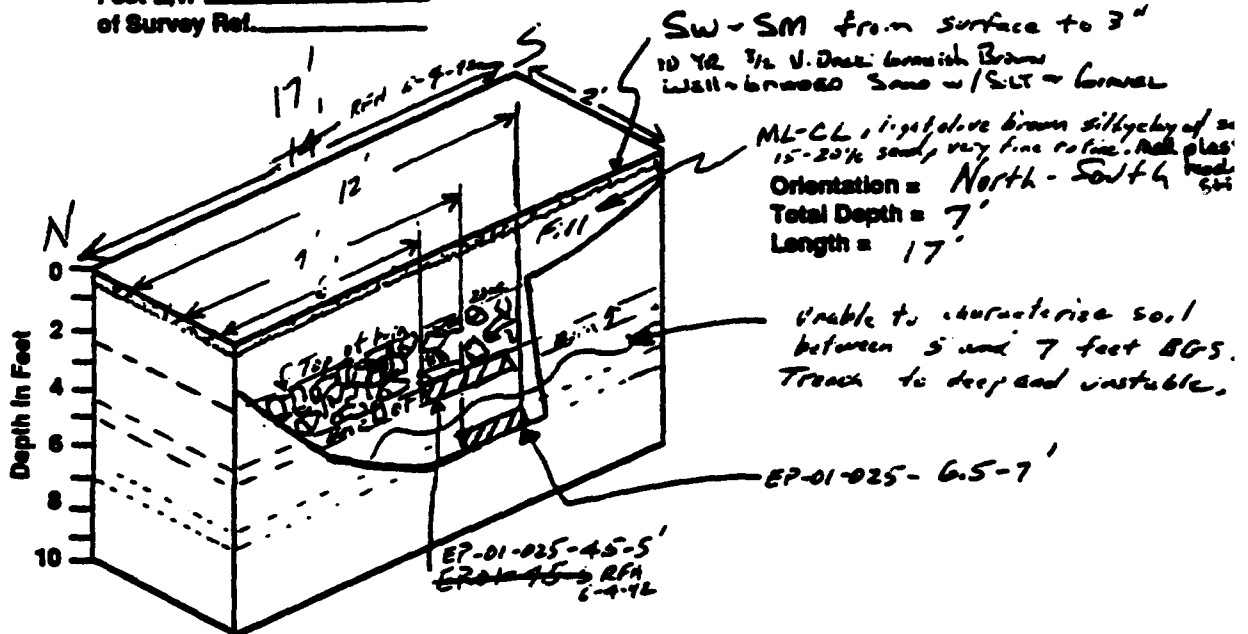
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / R.E. Herbert  
 TEST PIT LOG: TP EP-01-025  
 DATE EXCAVATED: 6-4-92  
 TIME EXCAVATION BEGAN: 1400  
 WEATHER CONDITIONS: Dreary, cloudy, cool, 5-10 mph NE wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-025-4.5-5'		SM	DARK yellowish brown (10YR 4/4), moist, Silty Sand w/very fine to medium sub-rounded to sub-angular Sand, Loose. Difficult to cut grading due to presence of bone fragments. 15% - 20% fines, non-plastic. NO Gravel.	0.0 m
EP-01-025-6.5-7'		SP-SM	Light Olive Brown (2.5Y 5/4), moist poorly-graded Sand w/silt; about 90% fine to v. fine sub-rounded loose Sand without 10% fines, non-plastic. NO Gravel.	0.0 m

## Comment:

- Debris includes three containers w/ Porchite Lines (metal), and smaller unidentified containers.

PROJECT NO. 2942.0120



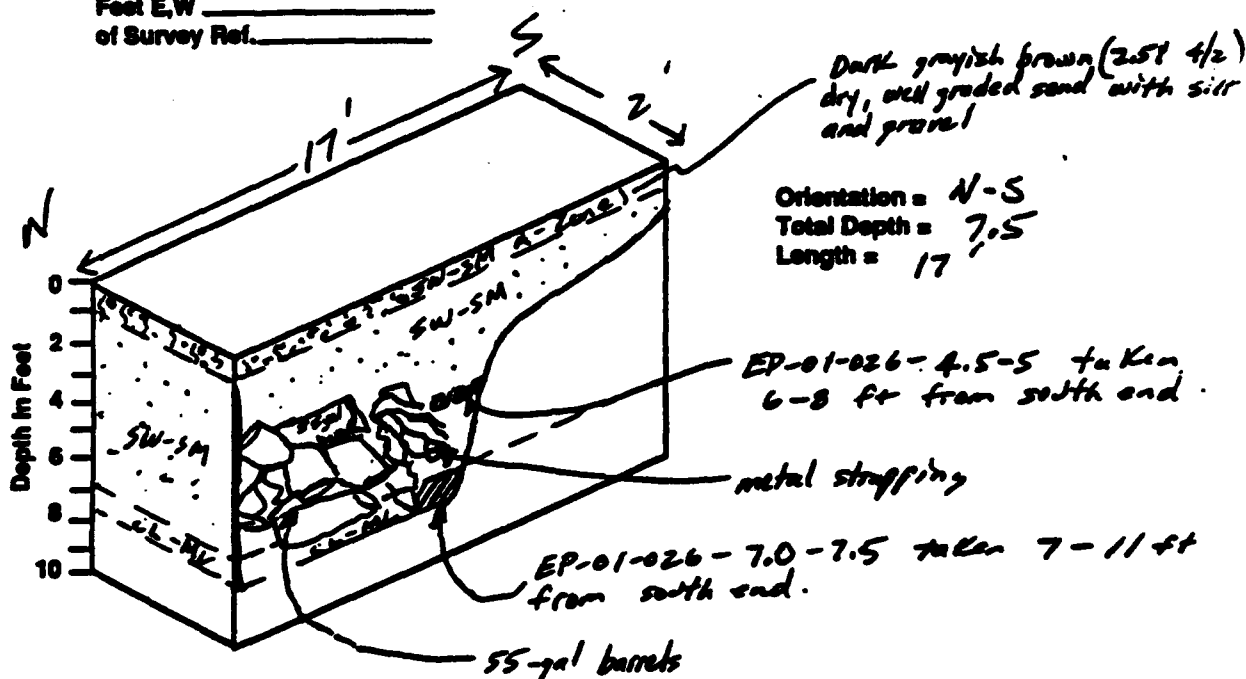
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / R.F. Hardest  
 TEST PIT LOG: TP EP-01-026  
 DATE EXCAVATED: 6-9-92  
 TIME EXCAVATION BEGAN: 0835  
 WEATHER CONDITIONS: Clear, 60°, 15-20 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-026-4.5-5'		SW-SM	Very dark grayish brown (2.5 3/4) moist Well-Graded Sand w/silt approx. 80% fine to coarse sub-angular to sub-rounded sand, 10-15% fines with about 5% fine sub-rounded Gravel. Loose; non-plastic to low plasticity.	0.0 ppm
EP-01-026-7'-7.5'		CL-ML	Light Olive Brown (2.5 1/4) moist lean Clay with with Sand and Silt. Contains inclusions of fragments of far clay may be just above contact w/Clay. 80% fine, 20% f. to v. fine sub-rounded Loose Sand. mod. Plastic, med. stiff. poorly-graded sand.	0.0 ppm

Comment:

P.T. Debris Encountered includes 6-55-gal. drums (no tops), and Smoke Cannisters (105 mm and 155 mm), 90 mm flare candles, possible high pressure cylinders, short pieces of 6-inch pipe, candle residue, white oxidation stains, metal strapping

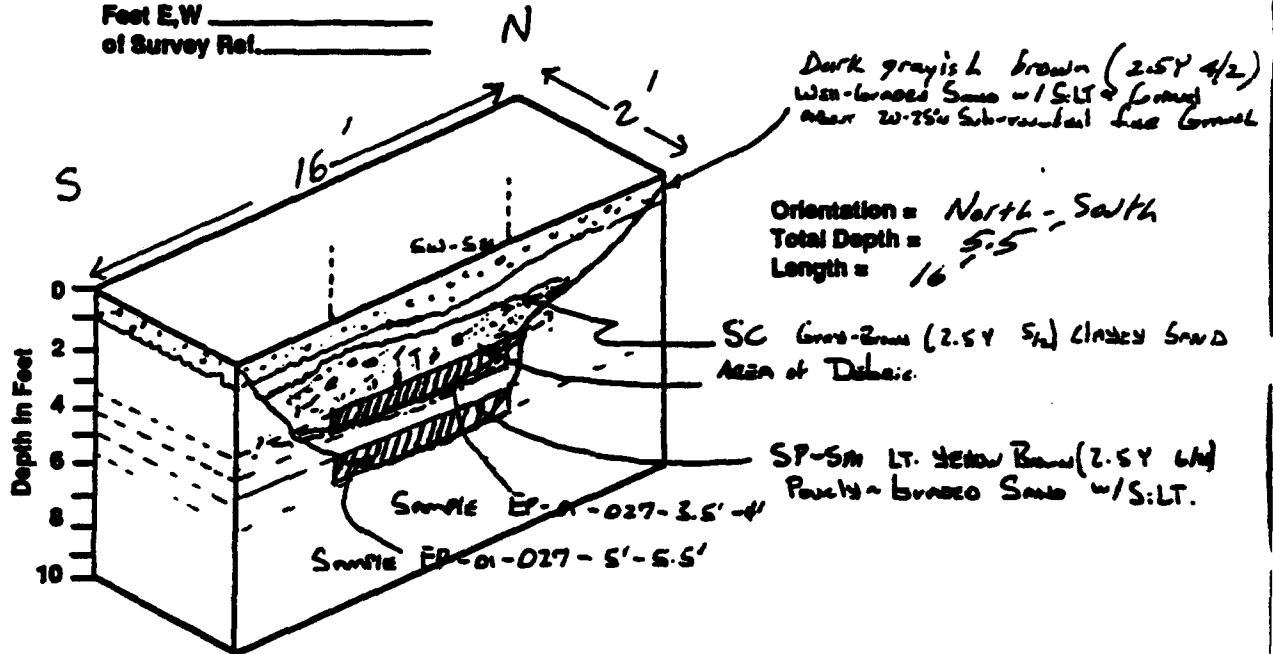
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Kravitz / R.F. Herbert  
 TEST PIT LOG: TP EP-01-027  
 DATE EXCAVATED: 9 June 1992  
 TIME EXCAVATION BEGAN: 1025  
 WEATHER CONDITIONS: Clear Windy from South 15-20 mph  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-027-3.5'-4'		SC	Grayish brown (2.5Y 5/2) clayey sand, moist, without 75% very fine to fine subrounded, loose sand, no gravel, about 25% fines, medium plasticity, moderate stiffness	0.0
EP-01-027-5'-5.5'	SP-SM		Light yellowish brown (2.5Y 6/4) poorly sorted sand with silt, moist, about 90% very fine to fine subrounded to subangular sand, nonplastic, loose, about 10% fines, soft, no gravel.	0.0

Comment:

- Trench debris includes unknown wall, steel tubing, copper pipe residue, and an electrical box. Original trench appeared to be 2' deep.

JME

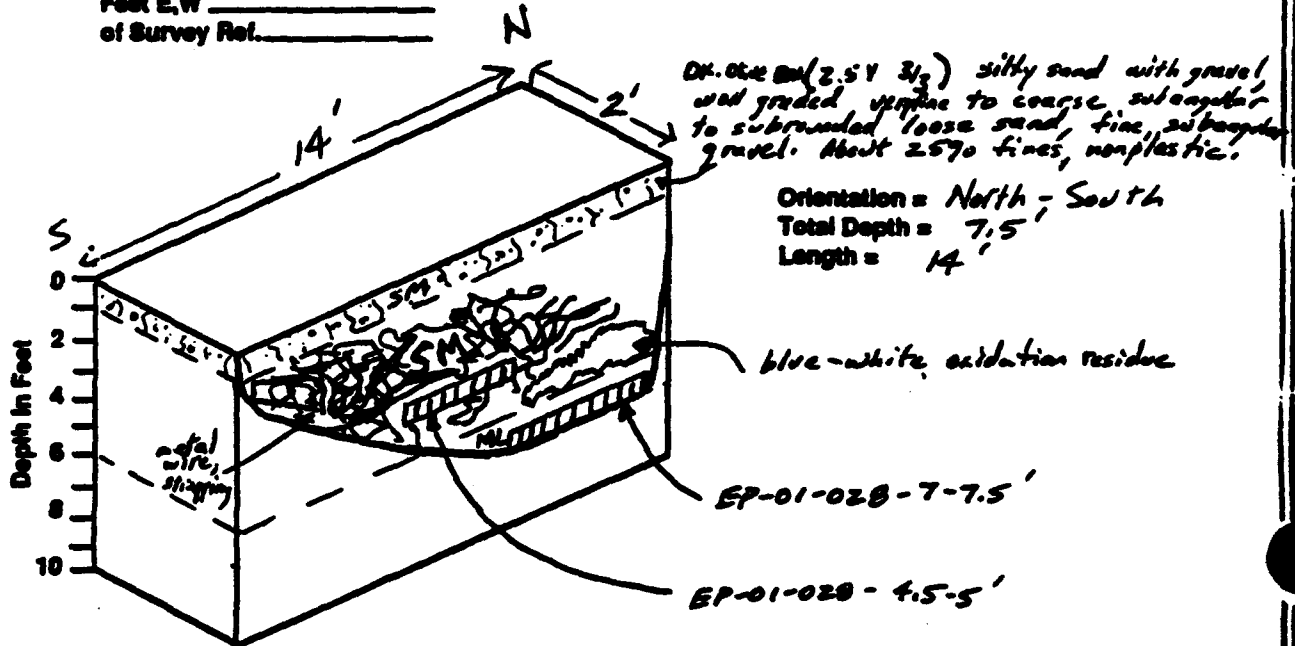


TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1  
 TEST PIT LOG: TP EP-01-028  
 DATE EXCAVATED: 6-9-92  
 TIME EXCAVATION BEGAN: 1255  
 WEATHER CONDITIONS: Windy Gusting to 35 mph out of West  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N, S \_\_\_\_\_  
 Feet E, W \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % fl, moisture, plastic)	VOC METER READINGS
EP-01-028-4.5'-5'		SM	Dark Olive Brown (2.5Y 3/2) med. S. LTY Sand w/about 80% recycling to coarse well-graded sub-rounded to subangular Sand; Loose. Non-plastic to slightly plastic. About 20% fines. 5% fine sub-rounded gravel. Contains finely ground mortar particles.	0.0 ppm
EP-01-028-7-7.5'		ML	Light Olive Brown (2.5Y 4/2) med. Sandy S. LTY; about 65% fines with Low plasticity, slightly st. fl.; About 36% f. to v.f. poorly-graded, sub-rounded Sand; no gravel.	0.0 ppm

Comment:

Encountered abundant metallic debris from 2.5 feet to 6 feet BGS. Debris included crushed ammunition boxes, a crushed 30 gal drum (empty), 3.5 inch rocket containers, banding wire, flat banding straps, other unidentifiable metallic debris. A bluish-white oxidation residue about 2.5 to 4 feet wide and 1 foot deep was at the base of the debris zone. Native soil appeared below 7'.

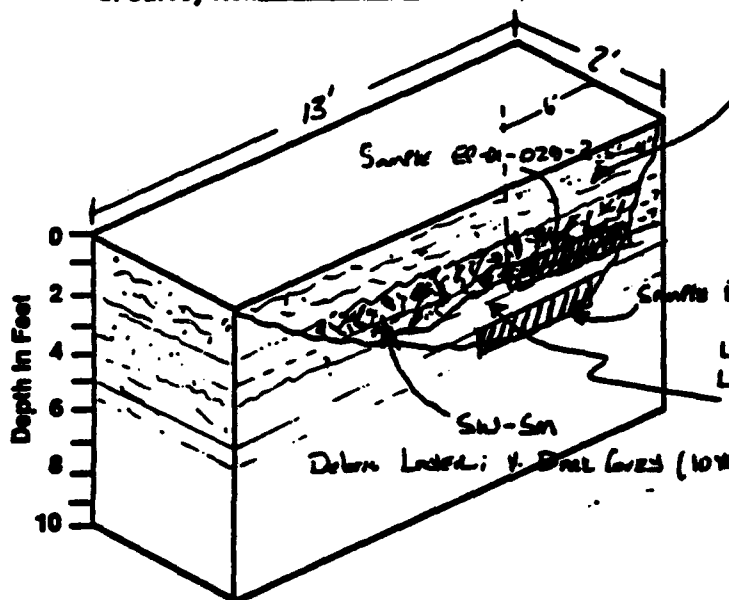


# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / R.F. Harbert  
 TEST PIT LOG: TP EP-01-029  
 DATE EXCAVATED: 6-9-92  
 TIME EXCAVATION BEGAN: 1443  
 WEATHER CONDITIONS: Partly cloudy, 85-90°F, no wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Backfill materials from Surface to  
 Debris Layer (0'-2.5'); Olive Brown  
 (2.5Y 4s) S.LTS Sand, well-graded,  
 ≈ 40% Fines. Low Plasticity, CL-CTH.  
 Sufficient to meet Gravel. SM  
 Orientation = E-W  
 Total Depth = 5 1/2'  
 Length = 13'

Undisturbed Soil Beneath Debris = ML  
 LT. Olive Brown (2.5Y 5s) Smooth S.LT  
 ≈ 100% fines.

Debris Layer: 1. Debris (10% 3/4) well-graded Sand w/ S.LT.

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-029	3.5-4'	SW-SM (Ash)	Very dark gray (10YR 3/1) moist well-graded sand with silt no gravel, abundant ash material. Loose, nonplastic, about 10% fines.	0.0
EP-01-029	5-5.5'	ML	Light olive brown (2.5Y 5/s) moist sandy silt, about 60% fines, medium plasticity, moderately stiff, about 40% poorly graded fine to very fine subrounded, loose sand.	0.0

## Comment:

Encountered debris at 2.5 feet BGS; includes banding material both flat and wire, 3.5 inch rebar, water pipe. Minor white - bluish oxidation residue.

PROJECT NO. 10420120

JME



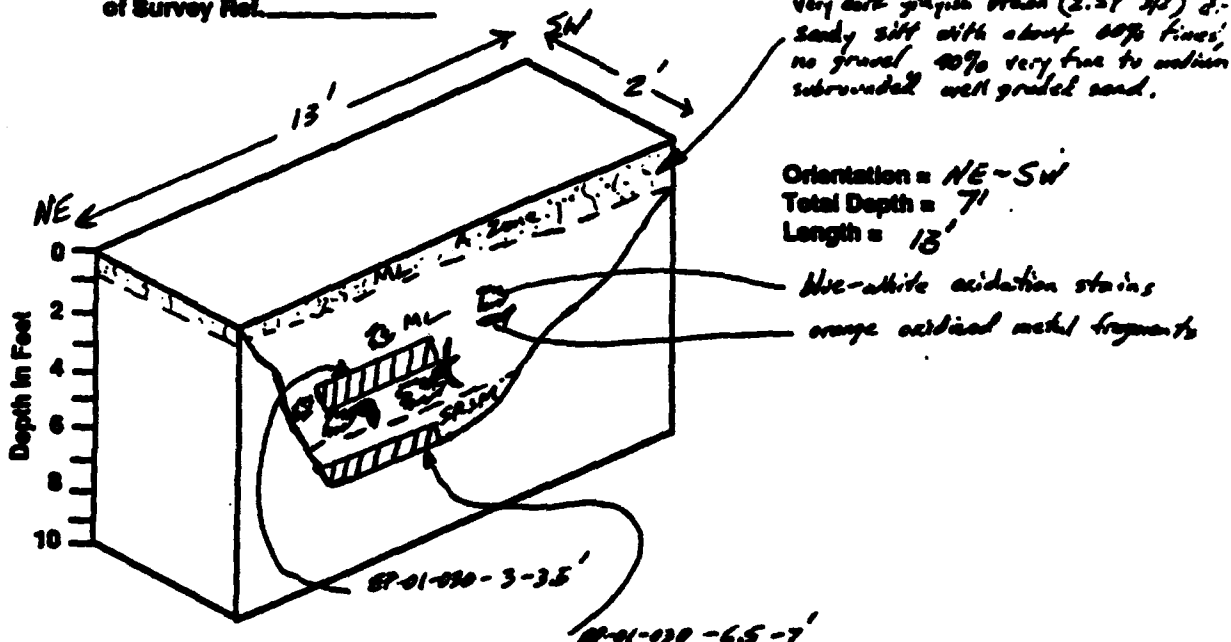
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.L. Krupicku / R.F. Herbert  
 TEST PIT LOG: TP EP-01-030  
 DATE EXCAVATED: 0800 AM 6-10-92 6-10-92  
 TIME EXCAVATION BEGAN: 0800  
 WEATHER CONDITIONS: partly cloudy, 65°F, 20 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (L)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % s, moisture, plast.)	VOC METER READINGS
EP-01-030-3-3.5'		ML	Very dark grayish brown (2.5Y 4/2) moist, sandy silt, with about 60% fines. Low plasticity, moderately stiff; about 40% v. fine to coarse sub-rounded to sub-angular well-graded sand. No gravel.	0.0 ppm
EP-01-030-6.5-7'		SP-SM	Light blue brown (2.5Y 5/4) moist poorly-graded sand with 5% silt; non-plastic, slightly st. fl. about 15% fines, no gravel. Sand is v. fine to fine, sub-rounded.	0.0 ppm

Comment:

No clearcut benzene zone distinguished. From about 2' BGS to 6' BGS scattered oxidations of metal, both orange and bluish-white, and few metal fragments. Native soil below 6.5 feet BGS.

PROJECT NO. 2942.0120



TEAD-N PHASE I RFI

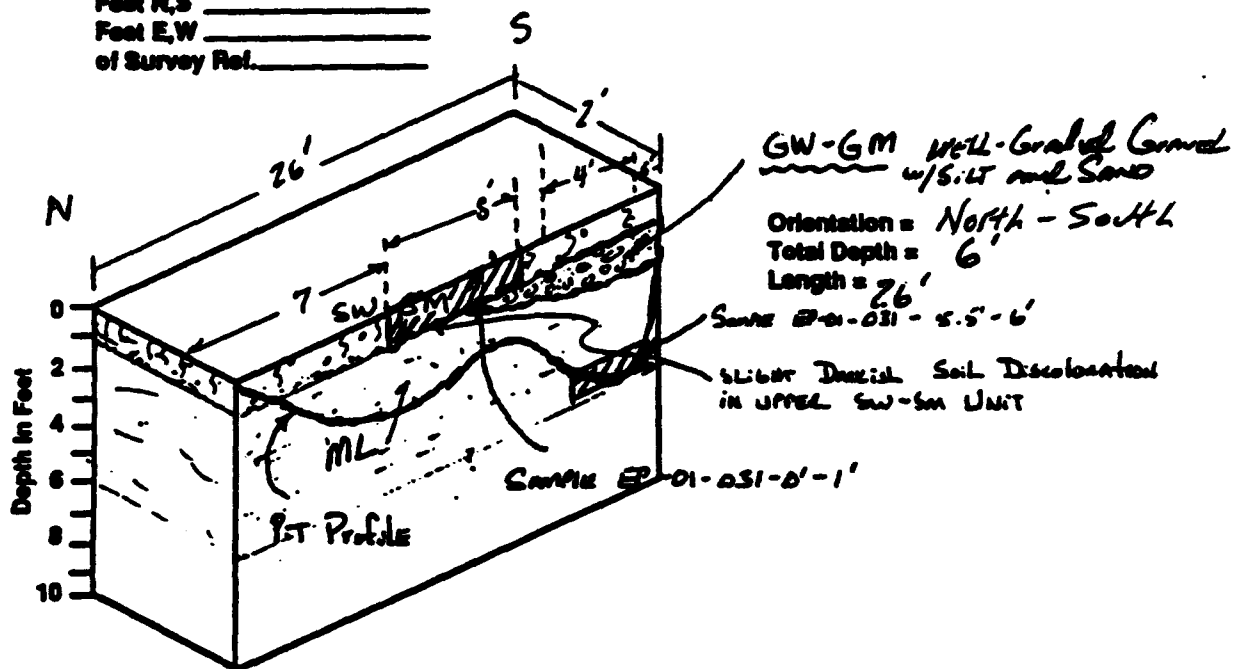


# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krapicka / E.F. Hackett  
 TEST PIT LOG: TP EP-01-031  
 DATE EXCAVATED: 6-10-92  
 TIME EXCAVATION BEGAN: 1050  
 WEATHER CONDITIONS: Cloudy, 85°F, 5 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-031-0-1'		SW-SM	Dark gray (10/12 H) dry well graded sand with silt and gravel, about 70% very fine to coarse subrounded to subangular loose sand about 20% fine to coarse subrounded to subangular gravel. Nonplastic	0.0
EP-01-031-5.5-6'		ML	olive brown (2.5Y 4/3) dry silt with clay, about 70% fines, no gravel, about 30% very fine subrounded sand, medium plasticity, moderately stiff to stiff.	0.0

Comment:

No debris, no visible ash or burn zone. However, obvious fill material observed with abundant well graded sand and gravel from about 1 to 3 feet DGS. UXB personnel suggest a possible powder burn trench.

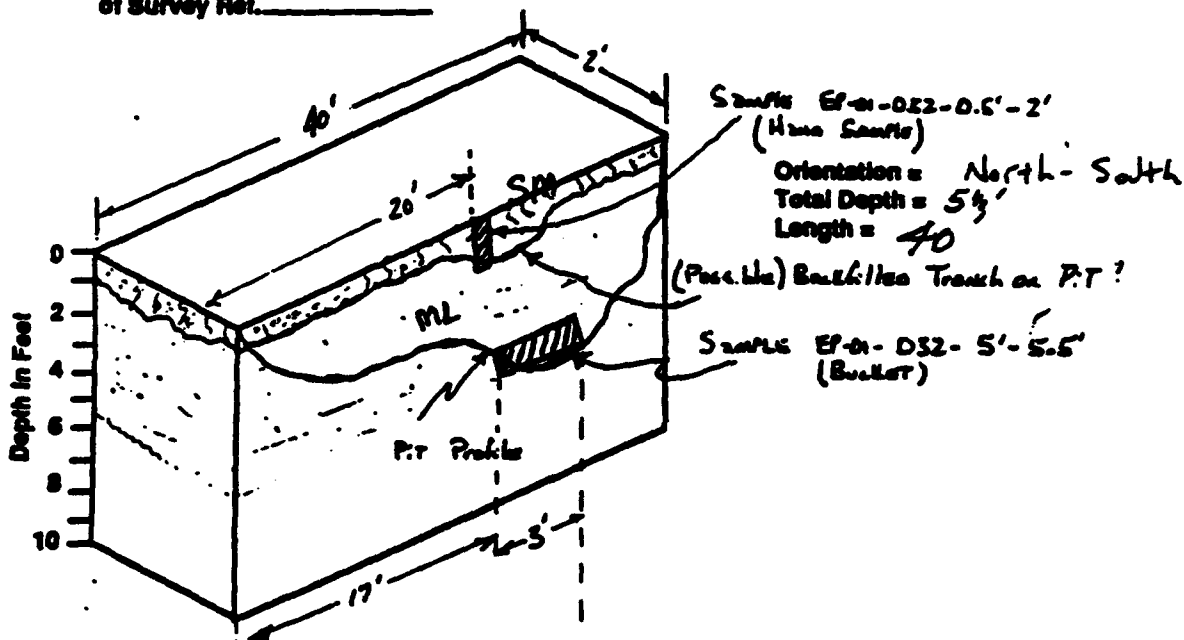


TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 D.C. Krupinka / R.E. Heiback  
 TEST PIT LOG: TP EP-01-032  
 DATE EXCAVATED: 6-10-92  
 TIME EXCAVATION BEGAN: 1410  
 WEATHER CONDITIONS: Partly cloudy, 85°F, 20 mph E. wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gw, % ss, % ll, moisture, plast.)	VOC METER READINGS
EP-01-032-0.5-2'		SM	Very Dark Grayish Brown (10% 1/2) clay silty Sand. About 65% s. to v. fine sub-rounded poorly-sorted Sand, Loose. Contains about 35% fines with low plasticity; soft to med. stiff. less than 5% gravel.	N/A
EP-01-032-5'-5.5'		ML	Brown (10% 1/2) dry silt with clay, about 75% fines, no gravel, about 35% very fine grained, subrounded sand. medium plasticity, moderately stiff.	0.0

Comment: No debris or Base Material NOTED.

PROJECT NO. 2942.0120

JMI

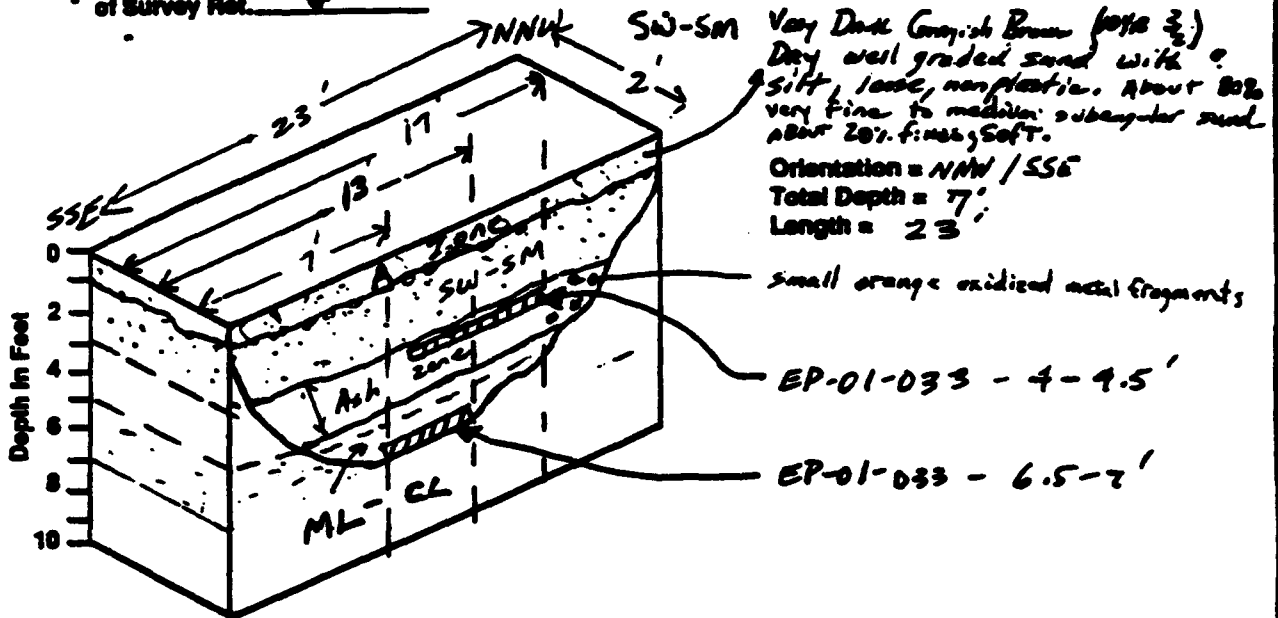


TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / R.E. Harbort  
 TEST PIT LOG: TP EP-01-033  
 DATE EXCAVATED: 11 June 1993  
 TIME EXCAVATION BEGAN: 0805  
 WEATHER CONDITIONS: PT. Cloudy, 65°-70°; mod. to still breeze from SW  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. W



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % ll, moisture, plast.)	VOC METER READINGS
EP-01-033	4-4.5'	SW-SM	Very dark grayish brown (2.5Y 3/2) moist, well graded sand with silt, about 99% very fine to medium subangular sand, loose, about 10% fines, nonplastic. Sample contains 1% - 2% small oxidized metallic fragments, no abundant wt/Grey Ash.	0.0 ppm
EP-01-033	6.5'-7'	ML-CL	Very Dark Grayish Brown (2.5Y 3/2) moist silt clay. About 80% - 85% fines with mod. plasticity, silty, stiff. Contains about 15% h. to v. fine subangular peach-graded sand.	0.0 ppm

Comment:

2-3' Trench Contains ~~two~~ Three Lens of Ashy Brown material, greenish, large chunk of metal burn slag and scattered orange oxidized small metal fragments.



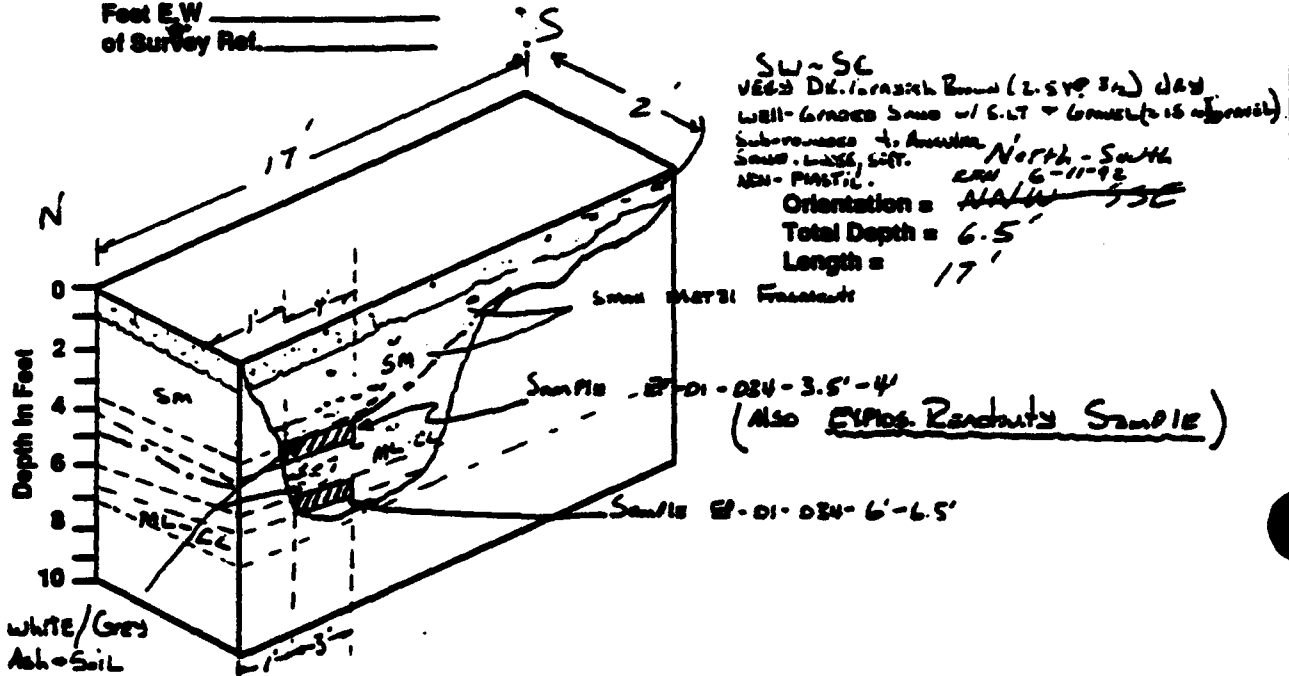
WT = white vt = very fine  
 f = fine  
 TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka, R.E. Hebert  
 TEST PIT LOG: TP EP-01-034  
 DATE EXCAVATED: 6-11-92  
 TIME EXCAVATION BEGAN: 0940  
 WEATHER CONDITIONS: Clear about 70°, 15-20 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-034	- 3.5'-4'	SM	Very dark grayish brown moist, (10% 4%) silty sand, no gravel, about 80% very fine to medium subangular to subrounded, well graded loose sand. Nonplastic about 20% fines, stiff to moderately stiff.	0.0
EP-01-034	- 6'-6.5'	<del>ML-CL</del> CL	Dark brown (10% 4%) moist, sandy, silty clay, about 70% fines, medium plasticity, moderately stiff, about 30% loose, very fine grained subrounded, poorly graded sand.	0.0

### Comment:

Debris consists mostly of fine Grey/White Ashes Residue and fine metallic chunks (DEBRIS). Bottom of Excavation Possibly Still in Old Trench.

PROJECT NO. 2042.0120

JME

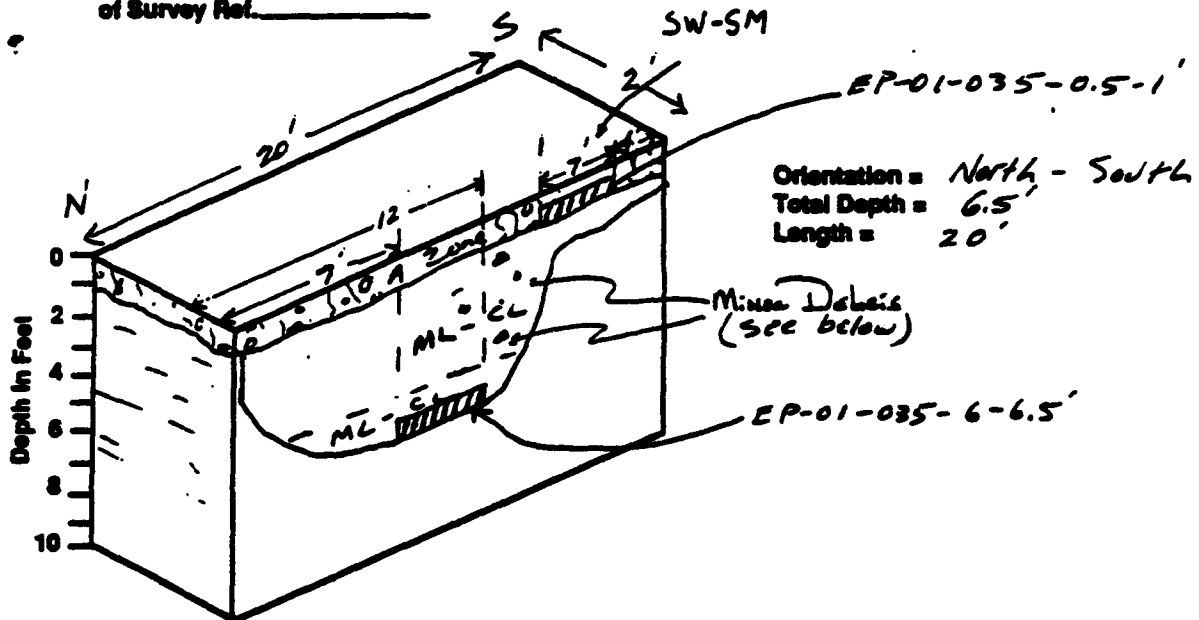


TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 D.C. Krupicka / R.F. Herbert  
 TEST PIT LOG: TP EP-01-035  
 DATE EXCAVATED: 6-11-92  
 TIME EXCAVATION BEGAN: 12:15  
 WEATHER CONDITIONS: Partly cloudy, 80°F, 20 mph E wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % fl, moisture, plastic)	VOC METER READINGS
EP-01-035	0.5-1'	SW-SM	Very dark grayish brown (2.5Y 3/2) moist, well graded sand with silt and gravel. About 70% very fine to coarse subrounded to subangular loose sand. About 20% fine to coarse subrounded to subangular gravel. About 10% fines, nonplastic and soft.	0.0 ppm
EP-01-035	6-6.5'	ML-CL	Dark yellowish brown (10YR 3/4) moist, medium plasticity, moderately stiff. About 30% very fine to medium, subangular to subrounded fine sand.	0.0 ppm

Comment:

Minor debris includes small metal plate fragments, a copper tube section, small rubber hose; no major debris or burn evidence.

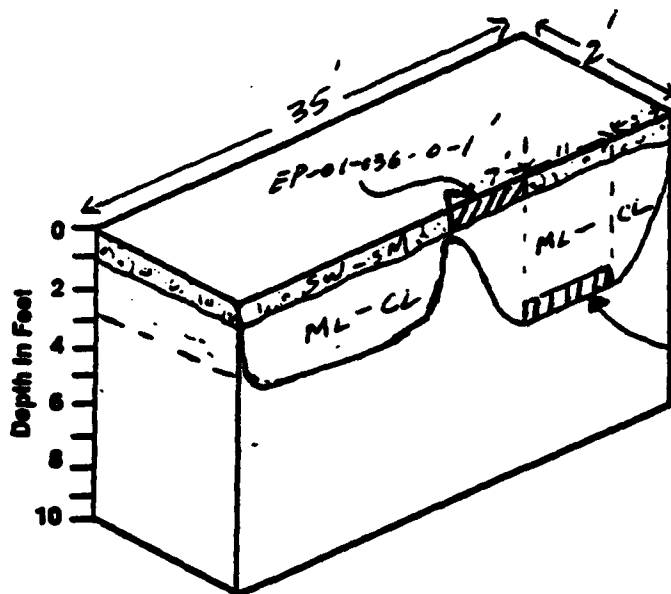


TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / R.F. Harkut  
 TEST PIT LOG: TP EP-01-036  
 DATE EXCAVATED: 6-11-92  
 TIME EXCAVATION BEGAN: 1330  
 WEATHER CONDITIONS: Partly cloudy, 80°F, 20-25 mph S wind  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Orientation = North-South  
 Total Depth = 5.5'  
 Length = 35'

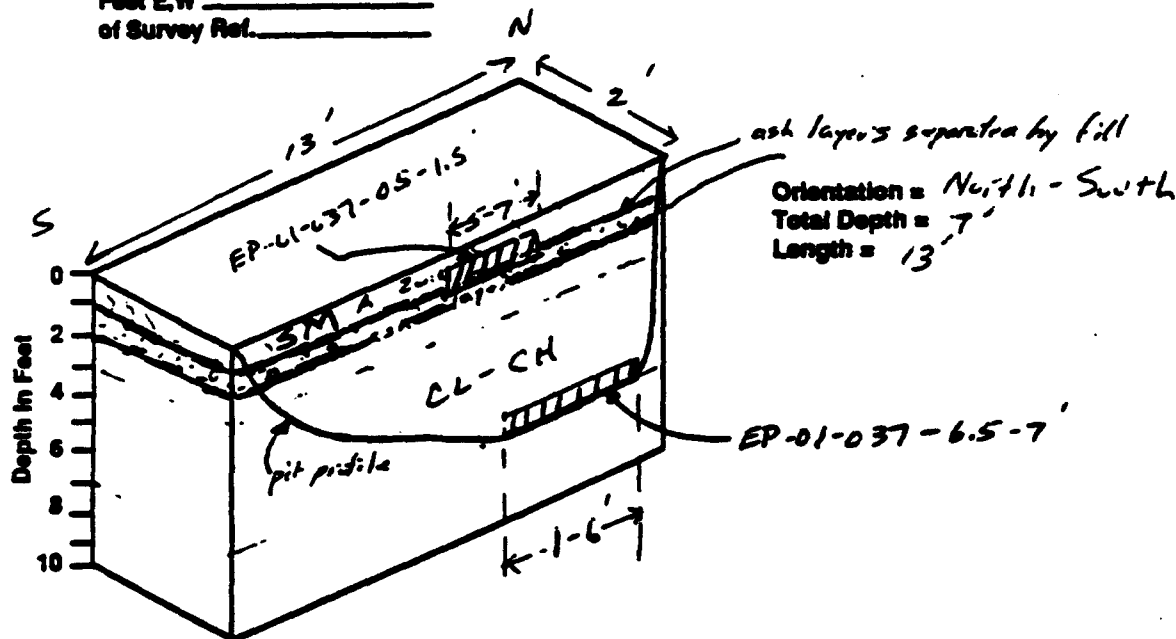
SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-036	- 0-1'	SW-SM	Dark olive gray (5Y 3/2) dry well graded sand with silt and gravel. About 75% very fine to coarse subrounded to subangular loose sand. About 15% fine to coarse subrounded to rounded gravel. About 10% fines, nonplastic, soft	0.0
EP-01-036	- 5-5.5' <sup>RAH 6-11-92</sup>	<del>ML-SM</del> <sup>ML-CL</sup>	olive brown (2.5Y 4/3) <sup>RAH 6-11-92</sup> silty with sandy tan clay <del>with fine sand</del> . About 70% fines with medium plasticity, moderately stiff. About 30% very fine to fine subrounded, poorly graded, loose sand. No gravel. Moist. <sup>RAH 6-11-92</sup>	0.0

Comment:

No evidence of burning or debris.

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 D.C. Drive / RF Herbert  
 TEST PIT LOG: TP EP-01-037  
 DATE EXCAVATED: 6-12-92  
 TIME EXCAVATION BEGAN: 0950  
 WEATHER CONDITIONS: clear 65°, 20-25 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-037-0.5-1.5'		SM	Slightly moist, 2.5y 3/4 very dark grayish brown silty sand (SM), non-plastic, non-stiff, loose. Approx. 5% gravel, 20-25% fines, 75% sand. v.f. coarse, subangular to subrounded sand. F. to med subangular to subrounded gravel	0.7
EP-01-037-6.5-7'		CL-CH	Slightly moist 10y 4/5 dark brown CL-CH fat clay - lean clay with sand plastic, stiff. No gravel 15-20% sand. very fine subangular to subrounded sand.	0.7

Comment: Two ash layers from 1 to 2' apart separated by a fill zone. Scattered oxidized metal fragments at 2nd' bgs. Lid from a 2" can, Charcoal from wood (approx 2" long) and fine copper wire. White/bluish residue, possibly aluminum

JMM

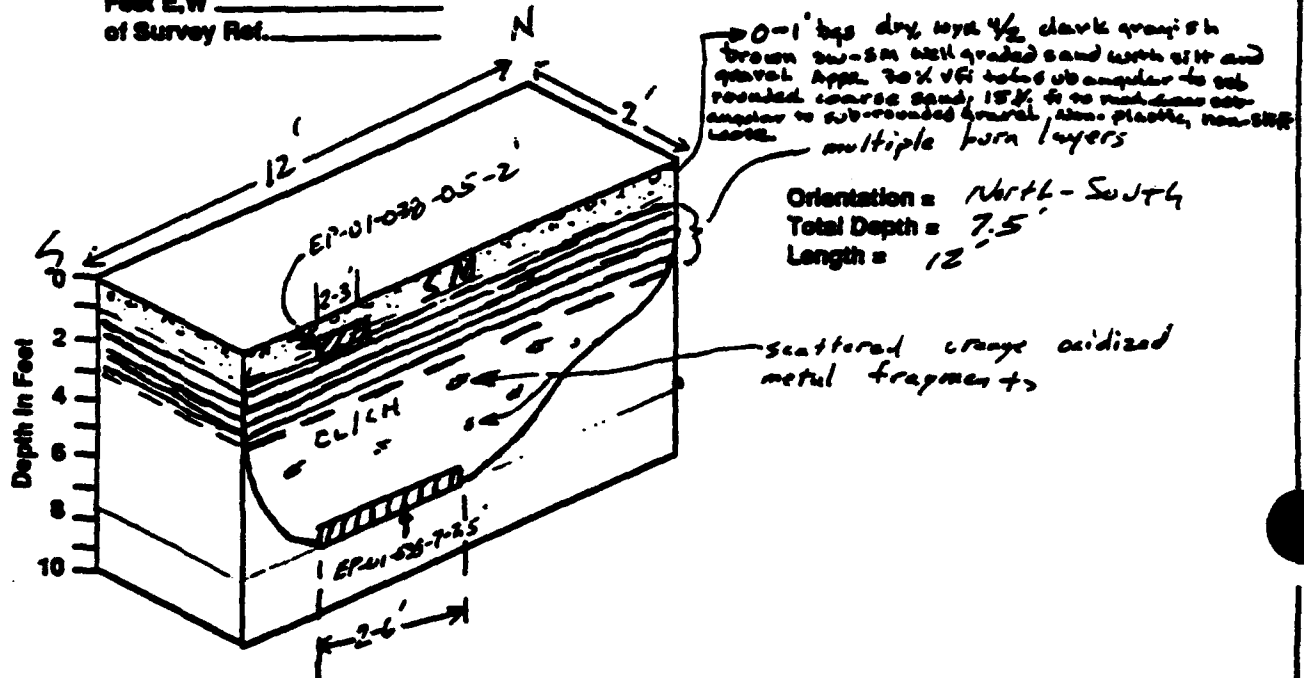


TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 P.C. Drive / R.F. Hecker  
 TEST PIT LOG: TP EP-01-038  
 DATE EXCAVATED: 6-12-92  
 TIME EXCAVATION BEGAN: 1015  
 WEATHER CONDITIONS: Clear 75°F 25-30 mph SW winds  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-038	-0.5-2'	SM	Slightly moist (2.5y 3/4) very dark grayish brown silty sand (SM). Non-plastic, non-stiff, loose. Appx. 5% gr, 20-25% fines, 70% sand. VFI - A sub-angular to subrounded sand. Firmed subangular to subrounded gravel.	0.7
EP-01-038	-7.5'	CL/CH	Wet (very wet) dark brown lean clay / fat clay with sand (CL/CH), plastic to very plastic; stiff to very stiff. No gravel. Appx. 15% VFI sub angular to subrounded sand.	0.7

**Comment:** Multiple burn layers from 1 to 3.5' BGS separated by fill layers. The number of burn layer was not distinguishable. Items encountered include a 2' diameter steel gas turret lid, 50 caliber bullets, and scattered orange oxidized metal fragments from 2' to 5' BGS.



gr = gravel  
 VFI = very fine  
 F = fine

TEAD-N PHASE I RFI

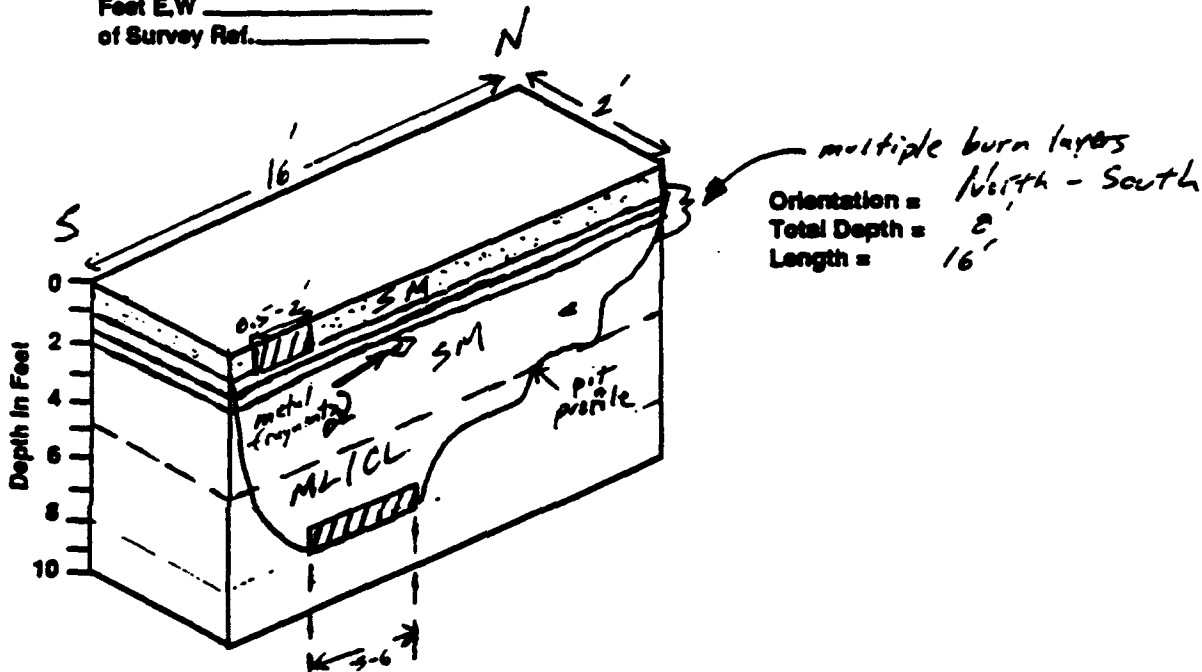


# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Drain / E.F. Heikant  
 TEST PIT LOG: TP EP-01-039  
 DATE EXCAVATED: 6-12-12  
 TIME EXCAVATION BEGAN: 12:41  
 WEATHER CONDITIONS: Clear 80°F 30 mph SW winds  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N,S \_\_\_\_\_  
 Feet E,W \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-039 - 0-1'		SM	dry to slightly moist, very dark grayish brown (2.5y 4/2) silty sand (SM). Loose, non-plastic, non-shiff. Appx. 5-10% fine to medium gr subangular to sub-rounded gravel, 15-20% fines; and 65-80% vfi to coarse to medium subangular to subrounded sand.	0.7
EP-01-039 - 7.5-8'		ML/CL	moist, dark yellowish brown (10yr 4/4) clayey silty sand or silty clay (CL/ML) with sand. Moderately stiff, moderately plastic. Approx. 30% si to vfi subangular to subrounded sand. No gravel.	0.7

Comment: From 1' to 3' BGS, thin multiple burn layers about 2' thick separated by fill. Very few orange oxidized metal fragments scattered below 1' BGS.

fish  
 vfi = very fine

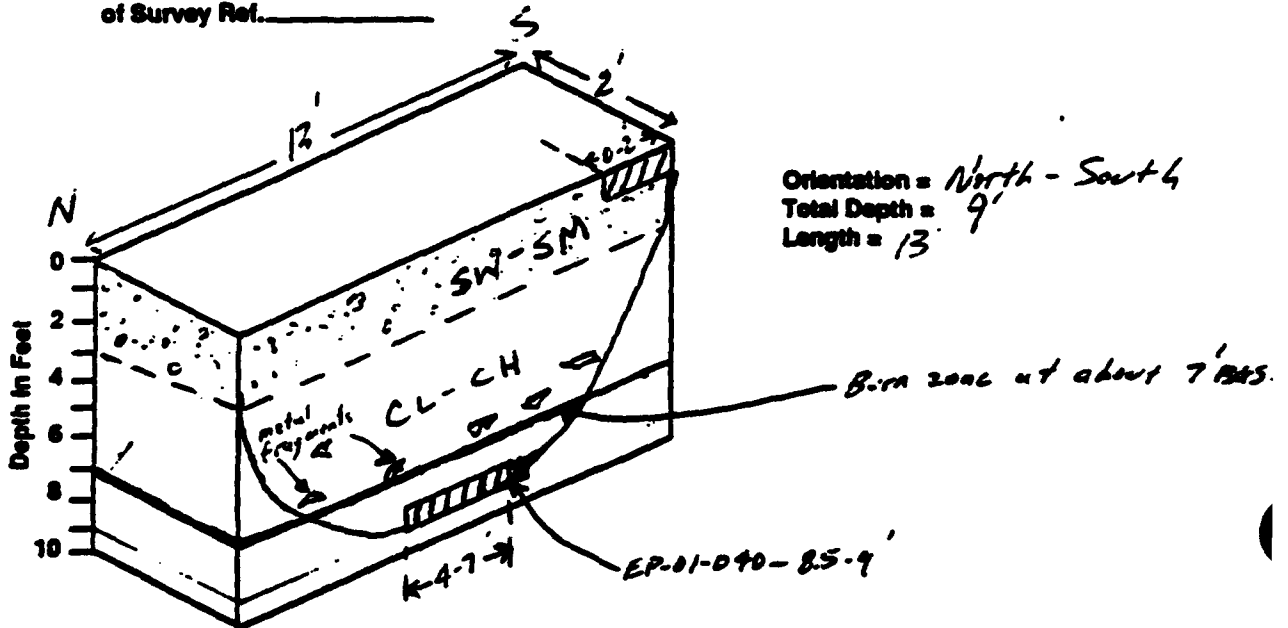


TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Drinn / R.E. Herbert  
 TEST PIT LOG: TP EP-01-040  
 DATE EXCAVATED: 6-12-92  
 TIME EXCAVATION BEGAN: 1355  
 WEATHER CONDITIONS: Clear, 80°, 25-30 mph SW winds  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-040	0-1'	SW-SM	dry to moist, dark grayish brown (mottled) (2.5y 4/2) well graded sand with silt and gravel. Appx 25% fi to med subangular to angular gravel; 15-20% fines; and 55-60% vfi to coarse subangular to subrounded sand. Loose	0.7
EP-01-040	8.5-9'	CL-CH	wet, dark brown (10y 4/2) lean clay / fat clay with <sup>sandy</sup> high plasticity, stiff to very stiff. No gravel, 15-20% vfi to fi subangular to sub-rounded sand	0.7

**Comment:**

Scattered orange-oxidized metal fragments from about 5' to 7' BGS. At 7' BGS a black burn zone about 3-4" thick. Below 8' BGS no evidence of debris or burning observed.

PROJECT NO. 2942.0120



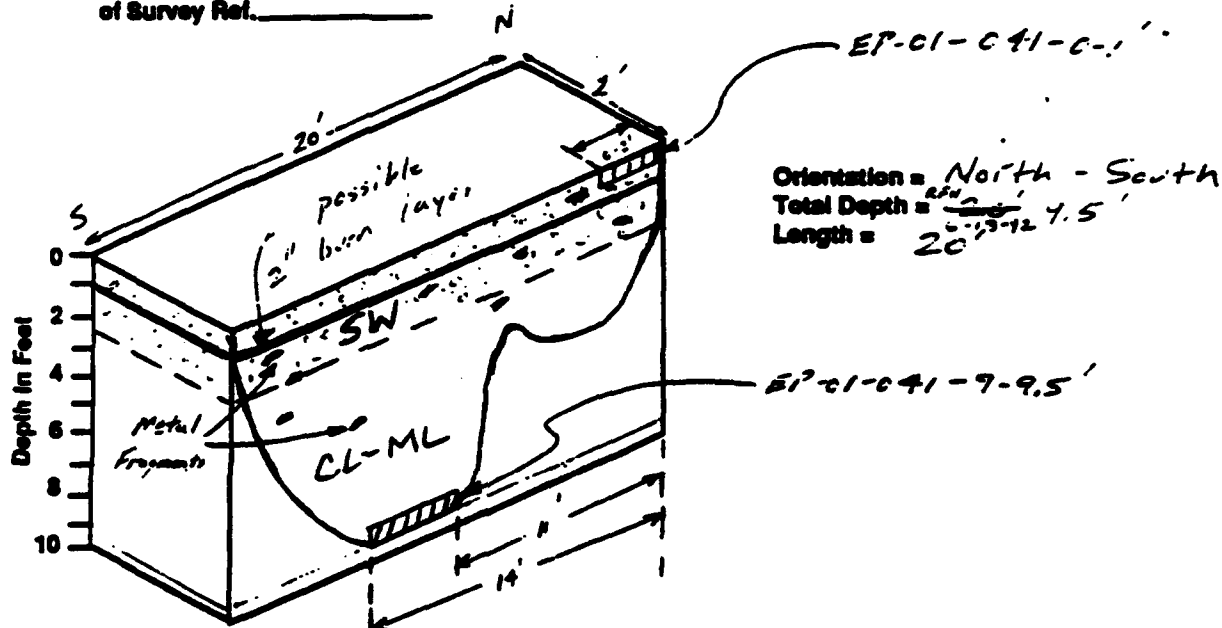
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. K... / R.F. Herbert  
 TEST PIT LOG: TP EP-01-041  
 DATE EXCAVATED: 6-13-92  
 TIME EXCAVATION BEGAN: 0830  
 WEATHER CONDITIONS: clear 60°F, 5-10 mph NE wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-041-0-1'		SW	VERY DARK GREY (10YR 3/1) MIST LAYERED WITH ORANGE OXIDIZED METAL FRAGMENTS. ABOUT 75% MOIST. GRAINED 11. LINE 4. LUMINOUS SUB. ROUNDED TO SUB-ANGULAR LARGES SAND, WITH DIRECT 20-75% LARGES SAND. SUB-ANGULAR TO SUB-ANGULAR (SAND). (4 1/2% FINESS).	0.0 ppm
EP-01-041-9'-9.5'		CL-ML	OLIVE BROWN (2.5Y 4/2) WET LEAN CLAY WITH CAUSC. CLT. ABOUT 75% FINESS WITH MEDIUM TO HIGH PLASTICITY, MOD. STIFF. ABOUT 20% F. TO V. FINE SUB-ANGULAR LARGES SAND WITH ABOUT 5% MEDIUM SUB-ANGULAR SAND. CALCAREOUS.	0.0 ppm

Comment:

At 1' BGS, a black 2" layer, possible burn zone. Few scattered orange-oxidized metal fragments 0-5' BGS. No major debris encountered during excavation.

PROJECT NO. 29-120

JMI



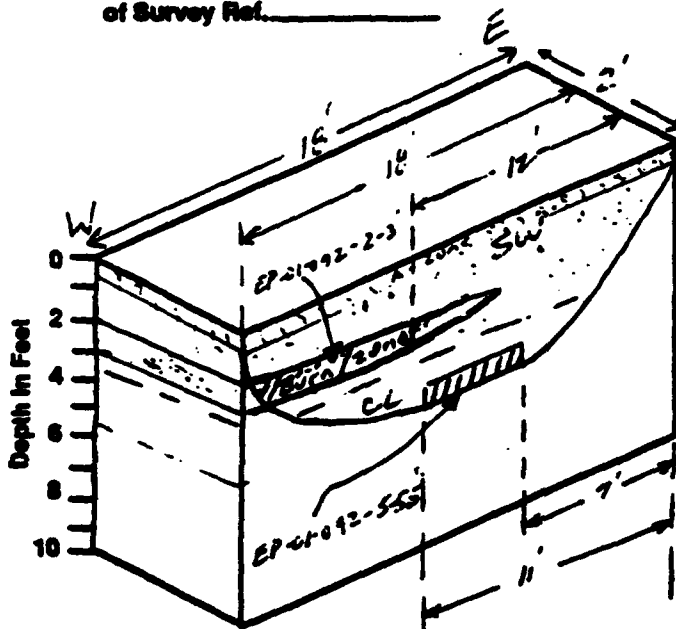
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1  
 TEST PIT LOG: TP EP-01-042  
 DATE EXCAVATED: 1-13-92  
 TIME EXCAVATION BEGAN: 1000  
 WEATHER CONDITIONS: Clear 70° F, 5-16 mph, 65% humidity  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Very Dark Green (10% 3/4) DRY  
 Sand w/ gravel - Calcareous - Most  
 20' fine sh. - medium coarse L.  
 (SW)

Orientation = East - West  
 Total Depth = 5.5'  
 Length = 16'

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % fl, moisture, plast)	VOC METER READINGS
EP-01-042-2'-3'		AH/S.L	Very Dark Green (10% 3/4) DRY Sand w/ gravel - Calcareous - Most 20' fine sh. - medium coarse L. fragments. non-plastic, L.A.C.	0.0 ppm
EP-01-042-5'-5.5'		CL	Dark Green (10% 3/4) mass, Calcareous L.A.C. about 5% fine - with med. to 1/4" fragments, med. st. fl. Contains about 10% - 15% fine - medium coarse L. w/ fine sh. - medium coarse L. no fragments.	0.0 ppm

Comment:

Encountered burn zone from 2 to 3' B.S. comprised  
 of whitish-gray burn residue and ash. Small chunks of  
 orange and white metal slag abundant in ash matrix.  
 Trench burn zone appeared to pinch out near middle of  
 pit indicating axis to be located westward.

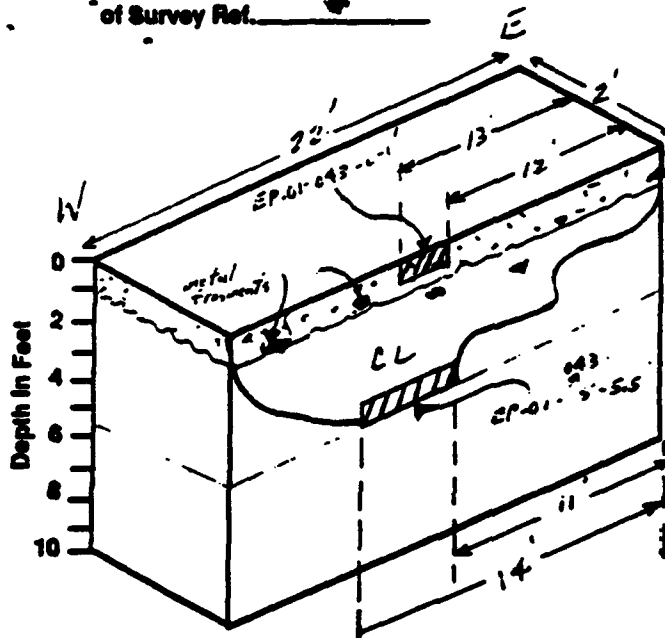


TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 P.O. Lindstedt & P.E. Hildebrand  
 TEST PIT LOG: TP EP-01-043  
 DATE EXCAVATED: 6-13-92  
 TIME EXCAVATION BEGAN: 1:30  
 WEATHER CONDITIONS: Clear, 74°F, LT. Breeze from NW  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SM-SC (see below)

Orientation = East - West  
 Total Depth = 5 1/2'  
 Length = 22'

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-043	C-1'	SM-SC	Very dark grayish brown (2.5: 3/4) Dk, calcareous silty sand - 1/2 in. Contains about 60% poorly rounded & to U-fine sub-rounded to sub-angular loose sand, with about 2:3-3:5 med. sub-angular sand. Contains about 40% fine w/ low plasticity to med. plasticity MOD. ST. H. 1 1/2-2 1/2 fine sub-rounded gravel. Dark yellowish brown (10 YR 3/4) med. calcareous lean clay. About 80-85% fine w/ med to high plasticity, moderately stiff; about 15-20% poorly- rounded s. to U-fine sub-rounded sand, w/ no gravel.	0.0 ppm
EP-01-043	5-5.5'	CL		0.0 ppm

Comment:

No major debris or obvious burn zone observed. Few  
 scattered orange oxidized metal fragments from 0-2' deep.

PROJECT NO. 200-0120

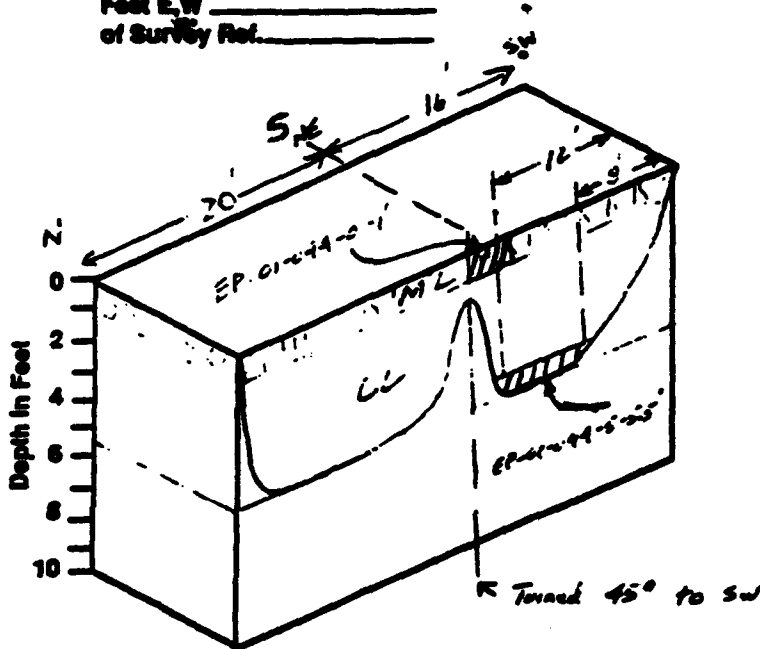


TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 P.C. Kerpick / B.F. Herbert  
 TEST PIT LOG: TP EP-01-044  
 DATE EXCAVATED: 6-13-92  
 TIME EXCAVATION BEGAN: 1:30  
 WEATHER CONDITIONS: Clear 75°F S - 10 mph N-E winds  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Orientation = East - West  
 Total Depth = 5.5'  
 Length = 20' + 16' = 36'

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-044 - 0-1'		ML	Very dark grayish brown (2.5Y 3/2) dry, calcareous sandy silt, about 60% fines, medium plasticity, moderately stiff. About 45% fine - very fine subangular to subrounded poorly graded sand, less than 5% fine subrounded gravel.	O.C ppm
EP-01-044 - 5-5.5		CL	Dark yellowish brown (10Y 2/2) moist, calcareous lean clay with sand. About 70-75% fines with medium to high plasticity, moderately stiff. About 25-30% poorly graded very fine to fine subrounded to subangular sand. No gravel. ABA 6-8-92	O.C ppm

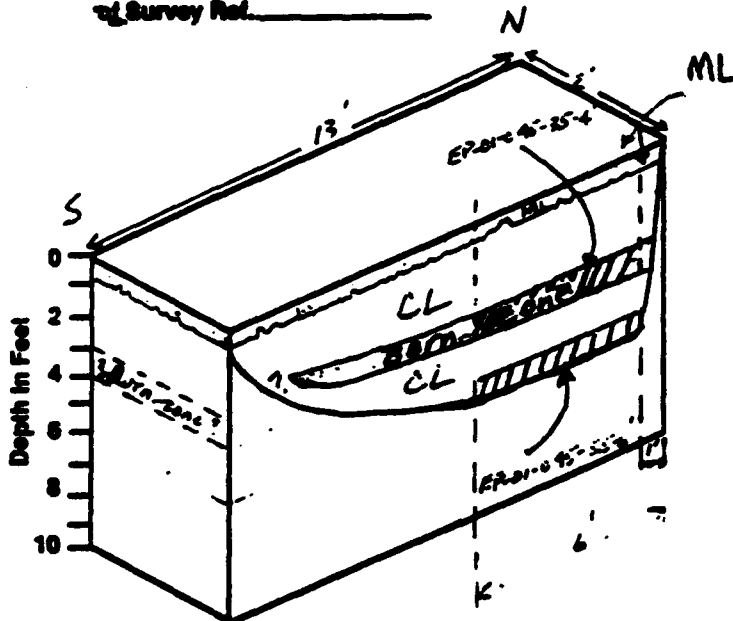
Comment:

No evidence of debris or burning.

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 D.C. Krupich / R.F. Heitler  
 TEST PIT LOG: TP EP-CI-C45  
 DATE EXCAVATED: 6-14-92  
 TIME EXCAVATION BEGAN: 0830  
 WEATHER CONDITIONS: Clear 55°F, 5 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Used Data (mudstone) (11.2 ft)  
 Dry Sand S.L.T. nonplastic  
 with 5 to 10% fine irregular gravel.

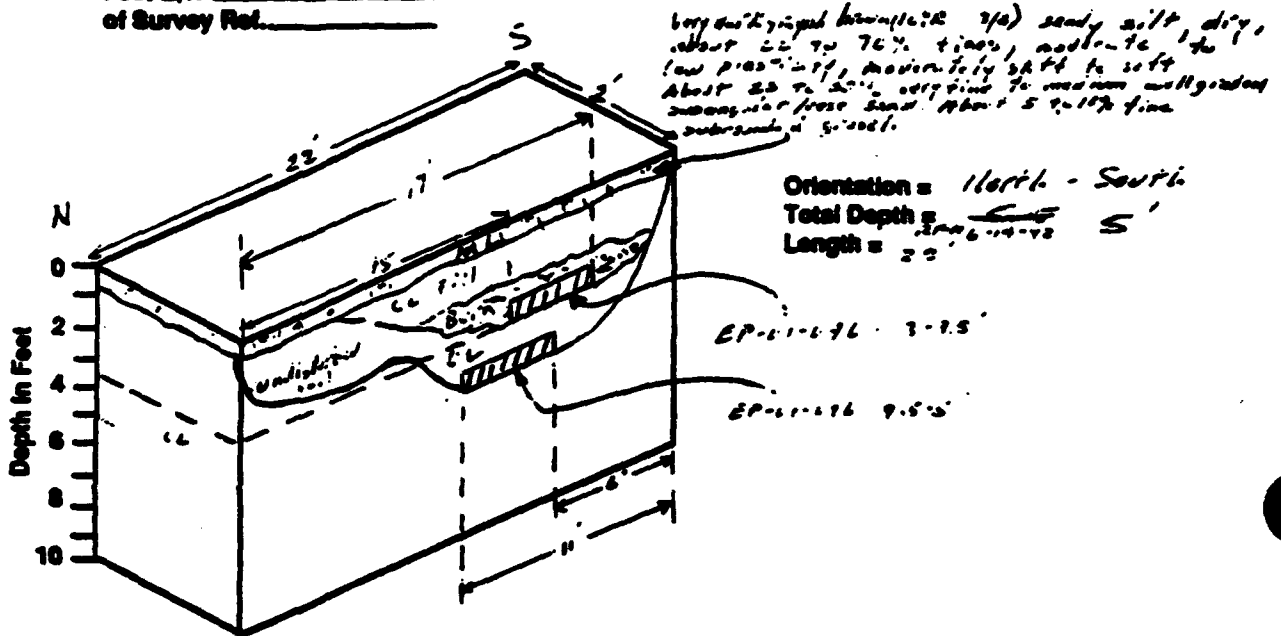
Orientation = North-South  
 Total Depth = 11'  
 Length = 13'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % s, moisture, plast.)	VOC METER READINGS
EP-CI-C45-3.5-4'		ASH	Black (10:2 4) incinerated soil and ash material. Nonplastic with abundant charcoal, white granite, and yellow burned metal fragments. No gravel. Moist.	0.0 ppm
EP-CI-C45-5.5-6'		CL	Brown (10:2 4/5) moist lean clay with sand. About 66 to 90% fines, medium to high plasticity, moderately stiff to stiff. About 16 to 25% poorly graded, very fine grained sand, angular to subangular sand. No gravel.	0.0 ppm

**Comment:** Trench contains distinct Brown Layer which is mineral and moderately white, yellow, reddish brown material, utilized metal chips, and abundant charcoal chunks. Also contained large pieces (1 to 6' long) of metal slag.

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 D.G. Kopycka / R.F. Hachert  
 TEST PIT LOG: TP EP-01-046  
 DATE EXCAVATED: 6-14-92  
 TIME EXCAVATION BEGAN: 07:50  
 WEATHER CONDITIONS: Clear, 60°F, 5 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_  
 Foot N/S \_\_\_\_\_  
 Foot E/W \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % s, moisture, plast.)	VOC METER READINGS
EP-01-046 - 3-3.5'		ML	Dark grayish brown (10YR 4/2) moist sandy silt. About 60 to 65% fines, low plasticity, moderately stiff. About 20-25% very fine to fine subangular to subrounded loose poorly graded sand. No gravel.	0.0 ppm
EP-01-046 - 9.5-10'		CL	Brown (10YR 4/3) moist lean clay with sand. About 90 to 95% fines, medium to high plasticity, moderately stiff. About 10 to 25% poorly graded fine to very fine subangular to subrounded sand. No gravel.	0.0 ppm

**Comment:** Encountered brown zone from 3 to 3.5' BGS. Within the top part of the brown zone, chunks (3 to 6" dia) of glassy vesicular material. No major debris.

PROJECT NO. 2042 0120

**JME**



TEAD-N PHASE I RFI

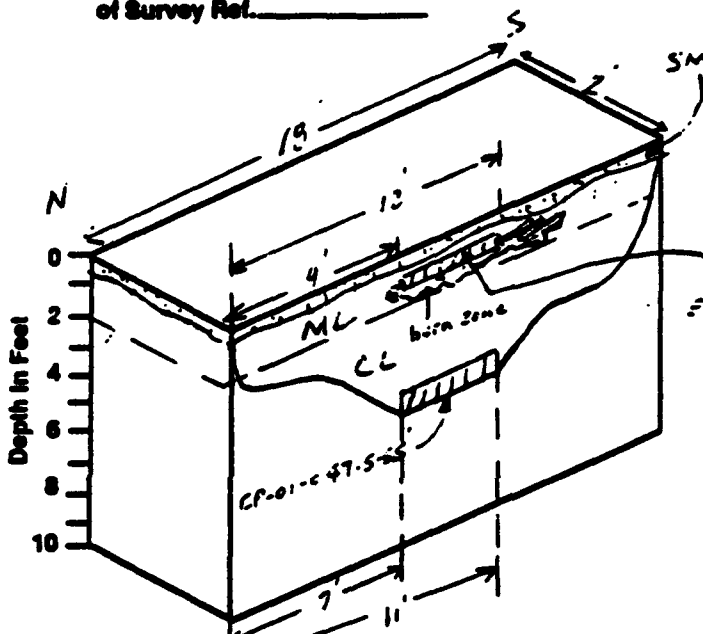


# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Dr. K. S. S. / C. E. H. H. 7  
 TEST PIT LOG: TP EP-01-C47  
 DATE EXCAVATED: 6-14-72  
 TIME EXCAVATION BEGAN: 12:15 12:15 PM  
 WEATHER CONDITIONS: Overcast 60°F, 5 mph to NE wind  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Very dark grayish brown (10YR 7/2) dry silty sand. About 70% silt fine to coarse, subrounded to subangular, loose, well graded sand. About 26 to 30% fines, low plasticity, soft to lean then 16% fine subangular gravel.

Orientation = North - South  
 Total Depth = 5.5'  
 Length = 18'

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-C47-1-1.5	1-1.5	ML	Very dark grayish brown (10YR 7/2) sandy silt. Dry about 60 to 70% fines, low plasticity, soft to moderately stiff, about 26 to 40% silt fine to fine, subrounded to subangular, loose, poorly graded sand. No gravel.	6.6 ppm
EP-01-C47-5-5.5	5-5.5	CL	Brown to dark brown (10YR 7/2) moist lean clay with sand. About 10-30% fines, medium plasticity, moderately stiff, about 26 to 40% silt fine to fine, poorly graded, subrounded to subangular sand and 6-8% fine to medium sand. No gravel.	6.6 ppm

Comment: Small lens shaped burn zone from about 1 to 1.5 ft comprised of glassy vesicular material. Also, a 34" length of steel pipe, a porcelain pellet, and minor amounts of orange oxidized metal fragments.

PROJECT NO. 2-120

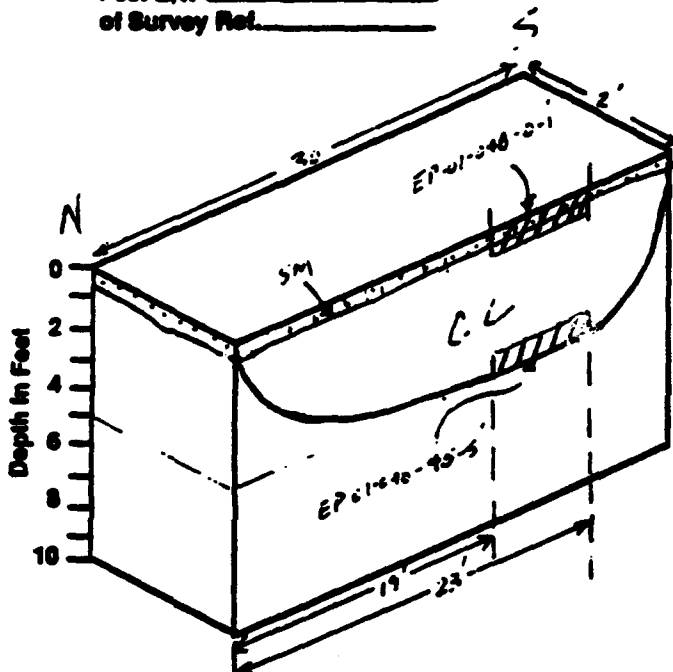


TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1  
 TEST PIT LOG: TP EP-01-048  
 DATE EXCAVATED: 6-14-92  
 TIME EXCAVATION BEGAN: 1332  
 WEATHER CONDITIONS: Clear, 62°F 0-5 mph, NE wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Orientation = North-South  
 Total Depth = 5'  
 Length = 30'

SAMPLE NO.	SAMPLE LOCATION (ft)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-048-0-1'		SM	Very dark grayish brown (10YR 4/2) silty sand, dry, about 70 to 80% very fine to medium, well graded, subrounded to subangular, loose sand. About 15 to 20% fines, nonplastic, soft. Less than 5% fine angularly sand.	0.0 ppm
EP-01-048-4.5-5		CL	Brown (10YR 4/2) moist lean clay with sand. About 70 to 80% fines, medium plasticity, moderately soft. About 30 to 40% fine to fine sand, subrounded, loose sand, subangular to subrounded. No silt.	0.0 ppm

Comment:

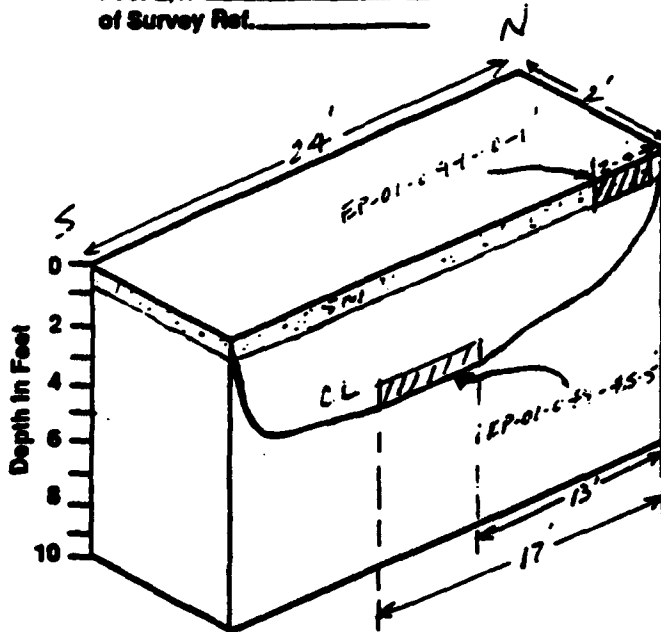
No evidence of vein or debris.

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1  
 TEST PIT LOG: TP EP-01-044-0-1  
 DATE EXCAVATED: 6-14-92  
 TIME EXCAVATION BEGAN: 10:22  
 WEATHER CONDITIONS: Overcast, drizzle rain 55° - 58° - 59° - 60° - 61° - 62° - 63° - 64° - 65° - 66° - 67° - 68° - 69° - 70° - 71° - 72° - 73° - 74° - 75° - 76° - 77° - 78° - 79° - 80° - 81° - 82° - 83° - 84° - 85° - 86° - 87° - 88° - 89° - 90° - 91° - 92° - 93° - 94° - 95° - 96° - 97° - 98° - 99° - 100°  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Orientation = North-south  
 Total Depth = 5'  
 Length = 24'

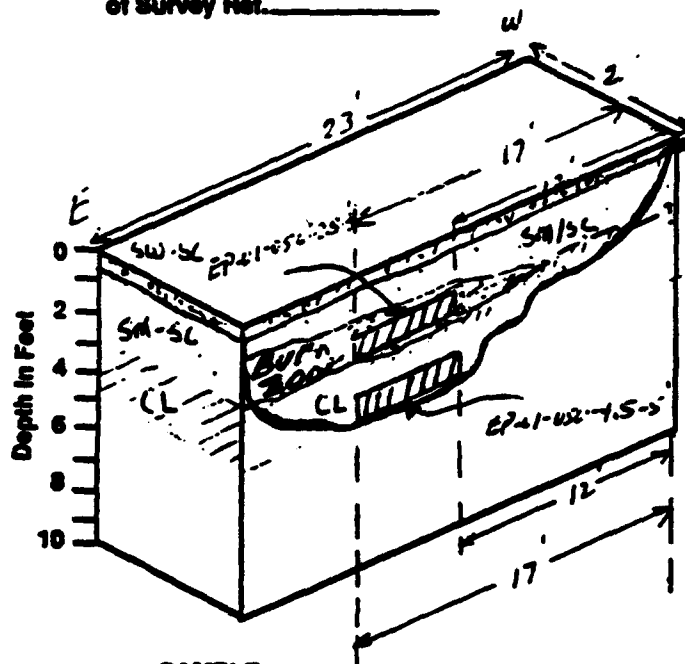
SAMPLE NO.	SAMPLE LOCATION (ft)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-044-0-1		SM	Very dark grayish brown (10:2 3/3) dry, calcareous, silty sand. About 60% to 70% very fine to medium, subangular to subrounded, well-graded, loose sand. About 30 to 35% fines, non to low plasticity, soft. About 5% fine subrounded, gravel.	0.0 ppm
EP-01-044-4.5-5		CL	Brown (10:2 4/5) to dark brown moist lean clay with sand. About 75 to 80% fines, medium plasticity, moderately stiff to stiff. About 20 to 25% very fine to fine, subangular to subrounded, poorly-graded, loose sand. No gravel.	0.0 ppm

Comment:

No evidence of burn or debris. Soil appeared to be undisturbed.

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 D.O. Krupnik / R.F. Harfield  
 TEST PIT LOG: TP EP-01-SC  
 DATE EXCAVATED: 8-15-92  
 TIME EXCAVATION BEGAN: 0825  
 WEATHER CONDITIONS: Overcast 55°F, 5 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



A Zone 0-6" str.  
 Dark Olive Gray (SY 3/2)  
 Dark Olive-Grained Sand w/ SILT,  
 SW-SE loose, soft, wet Grained.  
 Max. 10% Non-Plastic, soft  
 fines; about 30% fine sub-angular gravel.  
 Orientation = East-West  
 Total Depth = 5'  
 Length = 23'

SAMPLE NO.	SAMPLE LOCATION (TL)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % s, moisture, plast.)	VOC METER READINGS
EP-01-SC-2.5-3'		SM/SC	Very Dark Grained Brown (2.5Y 4/2) dry SILTY Sand w/ CLAY, about 60% v. fine to fine poorly-grained loose sub-angular sand, about 10% silt, low to med plastic fines - med gravel. STRONG Reaction - HLL.	0.0 ppm
EP-01-SC-4.5-5'		CL	Dark Olive Brown (2.5Y 3/2) med. LEAN clay with sand, med. stiff with med. to fine platy clay. Contains about 15% - 20% v. fine sub-angular poorly-grained sand. No gravel. STRONG Reaction - HLL.	0.0 ppm

**Comment:**

Burn zone encountered from 1.5 - 3' BGS pinching out in western half of pit. Items excavated include: a metal rod at 1 BGS, 50 cal cartridge, charcoal, wood, pieces of broken glass, and patches of oxidized white residue

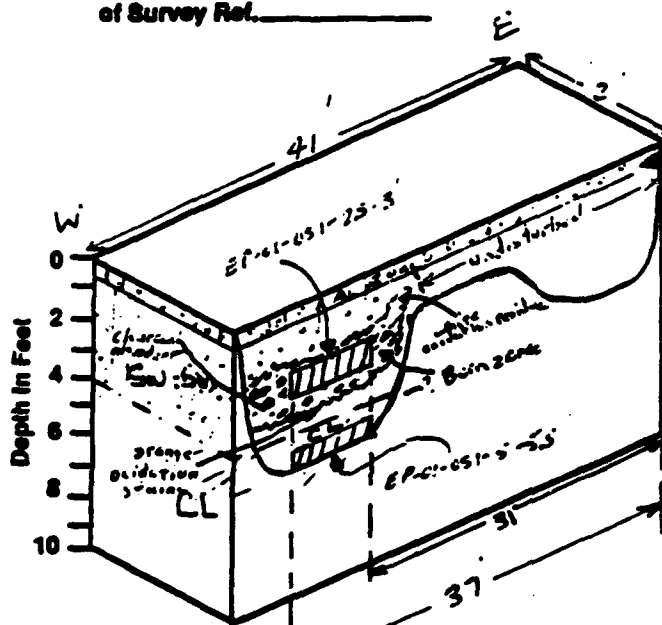


# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 2 Man Description Area De Kewick / R.F. Hibbert  
 TEST PIT LOG: TP EP-01-051  
 DATE EXCAVATED: 15 June 1992  
 TIME EXCAVATION BEGAN: 0940  
 WEATHER CONDITIONS: Cloudy (W) (55-65°F), light breeze from SE.  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SW-SM Very Dark Greenish Brown (2.5Y 3/2) Dry well-graded sand w/ silt. Lvs. SM, sub-rounded to angular sand, 10% to 15% fines w/ most to less than 10, 60% L. med. silt. Standard Zamb. HLL. Results.

Orientation = E-W  
 Total Depth = 5.5  
 Length = 41

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-051-2.5-3		SW-SM	Black (10YR 2/1) dry to moist, well-graded sand with silt. About 85-90% very fine to medium subangular to subrounded, soft, loose sand. About 10-15% fines, nonplastic, soft, No gravel. Strong HCL reaction.	0.0 ppm
EP-01-051-5-5.5		CL	Very Dark Greenish brown (10YR 2/2) moist Lean CLAY/MED to HLL Plastic (1.5) MOD. Stiff; contains about 10% to 15% poorly-graded sub-rounded sand & no gravel. Standard Reaction = HLL.	0.0 ppm

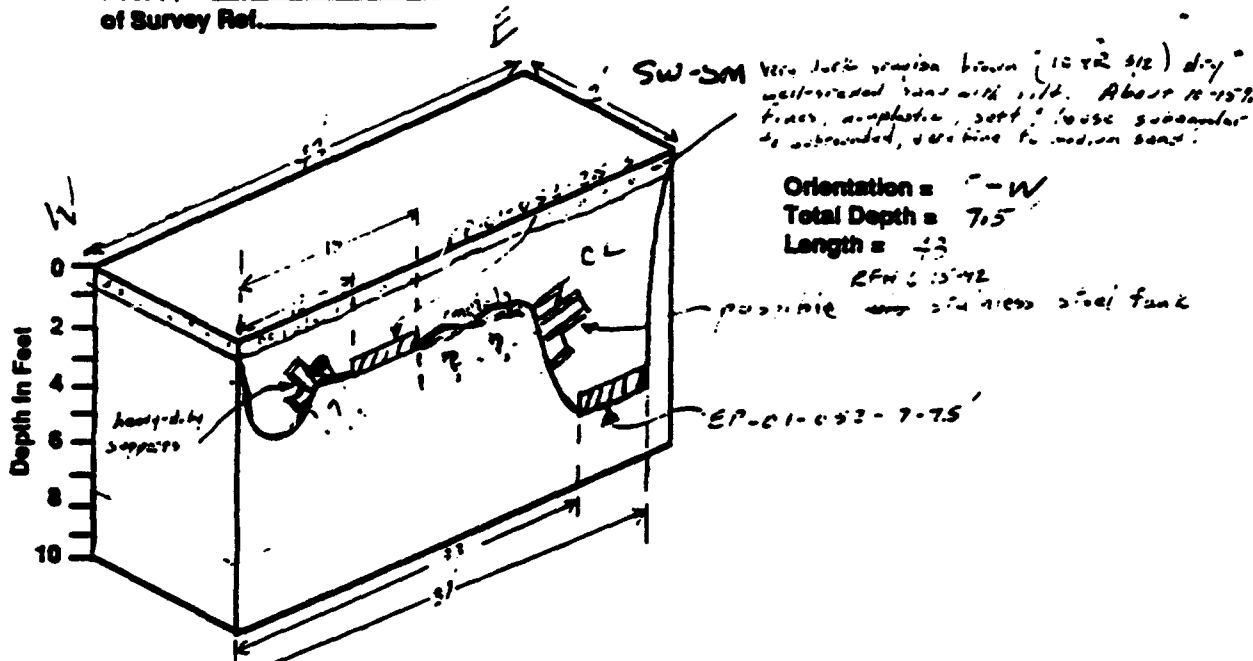
### Comment:

Burn zone encountered from 3.5 to 4 ft on western side of pit; contained abundant charcoal and orange and white oxidized residue. Also, items encountered included bomb suspension legs, ammunition box handles, nails, lens sections (2-3) of pits and nose cones etc of 2-30 cluster bombs.

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1  
 TEST PIT LOG: TP EP-01-052  
 DATE EXCAVATED: 1-15-92  
 TIME EXCAVATION BEGAN: 1:45  
 WEATHER CONDITIONS: partly cloudy, 65°F, light to med. breeze from E  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % fl, moisture, plast)	VOC METER READINGS
EP 01-052-2.5'-3'		CL	Very dk. Grayish Brown (2.5 Y 3/2) moist lean CL to silty sand, med. to high plasticity, med. stiff; contains about 20%-25% pebbles - Gravel sub-rounded silt to fine sand, w/ no gravel. STABLE Zonation w/ HLL. 75%-80% fines.	D.D PPM
EP-01-052-7'-7.5'		CL	Very dk. Grayish Brown (2.5 Y 3/2) moist lean CL to silty sand, med. to high plasticity, med. stiff; contains about 15%-20% pebbles - Gravel sub-rounded silt to med. sand, no gravel. 80%-85% fines. STABLE Zonation w/ HLL.	D.D PPM

Comment: Hit about 2 to 2.5 feet, hit refusal zone. After moving backhoe back 3 times (30'), still couldn't get under metal debris to pull out expit. Metal debris consisted of heavy-duty support fixtures, possible hoisting fixtures, metal stands, aluminum siding and/or roofing, and a possible stainless steel tank.

JMM



TEAD-N PHASE I RFI

AD-A282 574

TOOELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SNAUS

2715

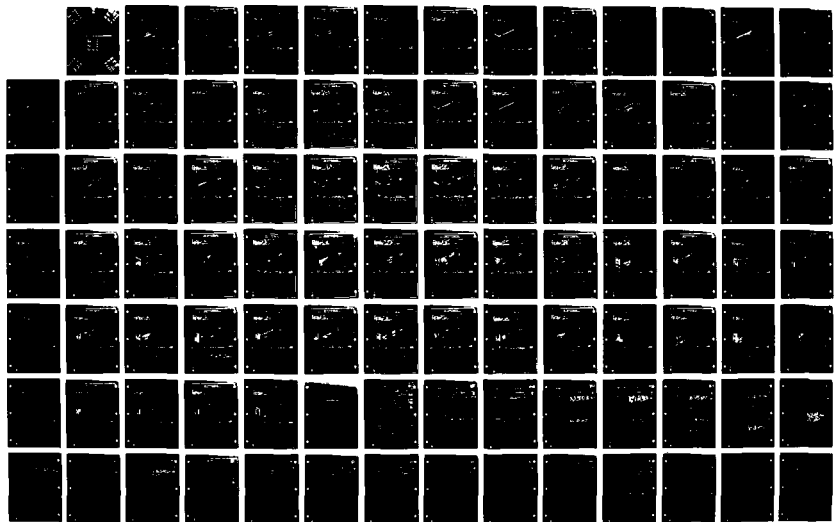
VOLUME 2 APPENDICES A - J REVISION(U) MONTGOMERY

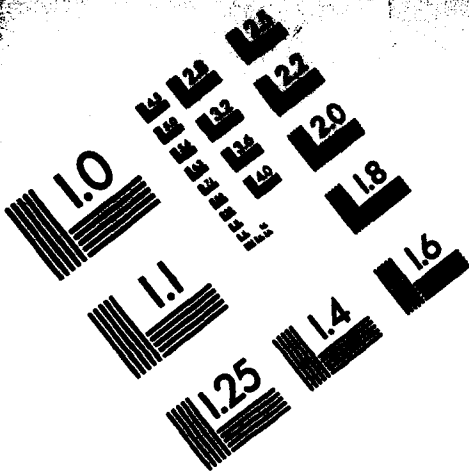
WATSON WALNUT CREEK CA DEC 93 XA-USAEC

UNCLASSIFIED

DAAA15-90-D-0011

NL



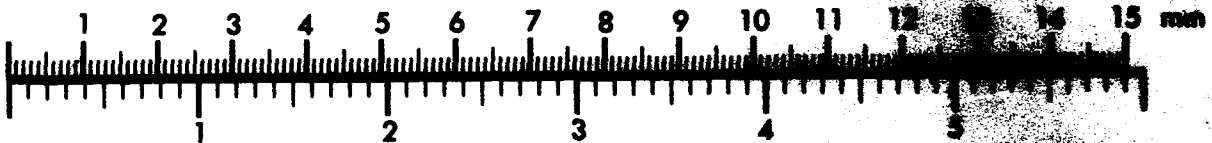


Association for Information and Image Management

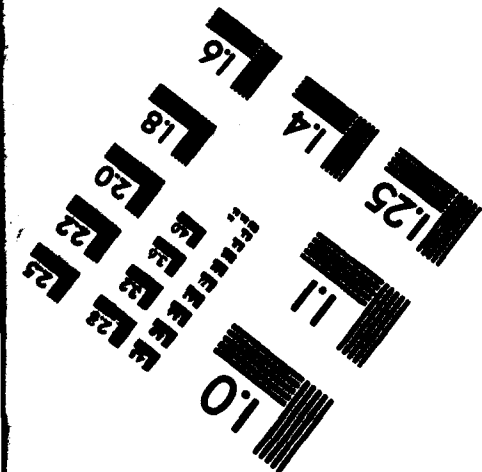
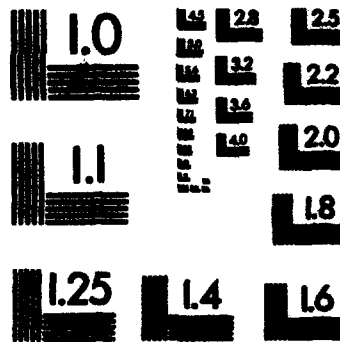
1100 Wayne Avenue, Suite 1100  
Silver Spring, Maryland 20910  
301/587-8202



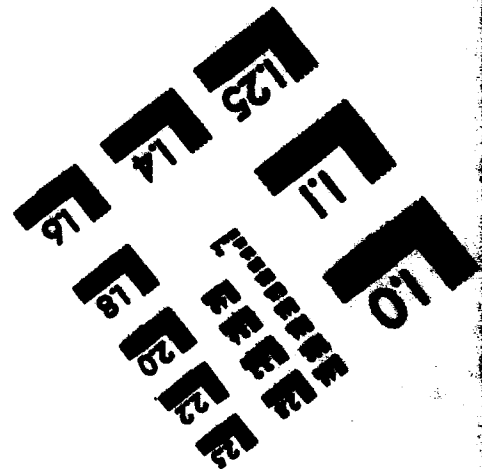
Centimeter



Inches



MANUFACTURED TO AIIM STANDARDS  
BY APPLIED IMAGE, INC.





# TEST PIT EXCAVATION LOG

**James M. Montgomery, Consulting Engineers, Inc.**

**SWMU NO.:**

**TEST PIT LOG: TP**

**DATE EXCAVATED:**

**TIME EXCAVATION BEGAN:**

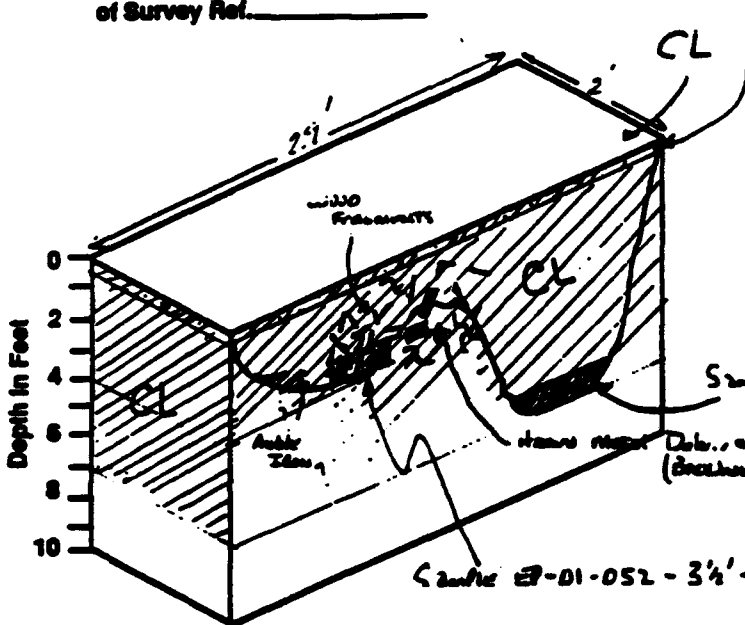
**WEATHER CONDITIONS:**

**LOCATION OF TEST PIT REFERENCE POINT:**

**Foot NLS**

Foot E.W

of Survey Ref.



Dark olive brown dry (2.5 T 3/3)  
lean clay with sand. <sup>100%</sup> About 80 to  
90% fines, <sup>medium</sup> stiff, <sup>plasticity</sup> <sub>medium</sub> plasticity.  
About 16 to 20% very fine to medium  
to s.s. rounded some. No gravel.

Orientation = North-South

**Total Depth :** 7

Length = 29

52-112 87-01-052-64'-7'

Del., a SECRETIAL  
(Enclosure Refusal)

Sample #7-01-052 - 3 1/4' - 4'

<u>SAMPLE NO.</u>	<u>SAMPLE LOCATION (RL)</u>	<u>USCS SOIL TYPE</u>	<u>SOIL DESCRIPTIONS (color, % gw, % ss, % fl, moisture, plast.)</u>	<u>VOC METER READINGS</u>
EP-01-053	- 3.5-4'	CL	Dark brown (10YR 4/3) moist lean clay with sand. About 90 to 92% fines, medium plasticity, moderately stiff to stiff. About 16 to 20% poorly-graded, very fine grained, subangular to subrounded sand. No gravel.	0.0 ppm
EP-01-053	- 6.5-7'	CL	Brown to dark brown (10YR 3/3, 4/3) moist lean clay with sand. About 85 to 90% fines, moderately stiff, medium plasticity. About 15 to 20% very fine grained, poorly graded, subangular to subrounded sand. No gravel.	0.0 ppm

Comment: Encased abundant unknown wood fragments, Able Iron, steel file, a Bolt CASING, AND OTHER IDENTICAL metal debris causing Backhoe Rupture in the Central Portion of the trench. Abundant metal STRAPPING.

**PROJECT NO.** 2042.0120

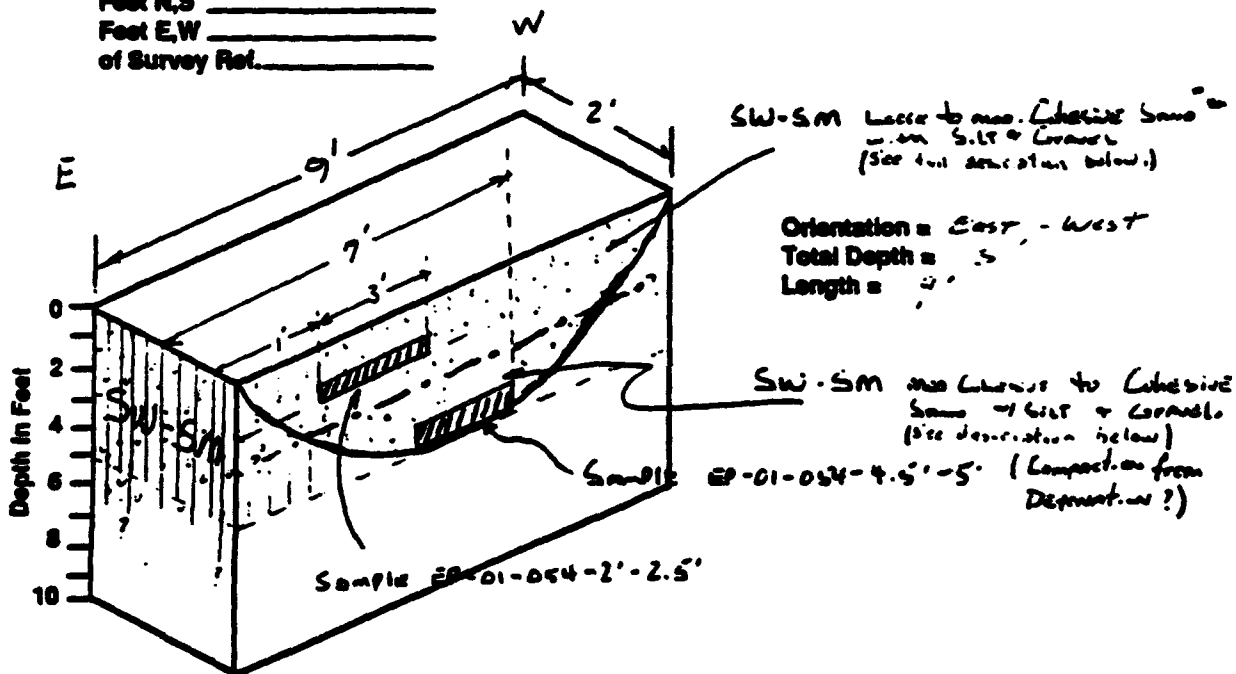
**TEAD-N PHASE I RFI**

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition Area D.C. Kipke/R.F. Hahner  
 TEST PIT LOG: TP EP-01-054  
 DATE EXCAVATED: 16 Jan 1992  
 TIME EXCAVATION BEGAN: 1310  
 WEATHER CONDITIONS: P. Cloudy, 65°F. Breezy to Calm  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (RL)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-054-2'-2.5'		SW-SM	Dark loamish brown (10YR 4/2) med to wet well-graded sand with silt and gravel. About 60 to 70% very fine grained to coarse subangular to subrounded loose-medium sand. About 20 to 30% fine subangular to subrounded gravel. About 10% fines, nonplastic, soft.	0.0 ppm
EP-01-054-4.5'-5'		SW-SM	Dark loam (10YR 4/1) well-graded sand with silt and gravel. Med to wet. About 60 to 70% very fine to coarse subangular to subrounded loose sand. In place within pit, this soil is cohesive. About 20 to 30% fine subangular gravel. About 10% fines, nonplastic.	0.0 ppm

### Comment:

Encountered Unburned Wood Fragments (Pine? Oak?) and Nylon Bag full of time fuse. Possible 1/4" - 1/2" cylindrical fuse holder - white weathered fragments of HEI(?) seen in Cohesive Chunks of soil from 4 1/2' - 5' B66 Sample. From 3' B66 f. 7D, some soil compaction was noted - possibly due to Disturbance.



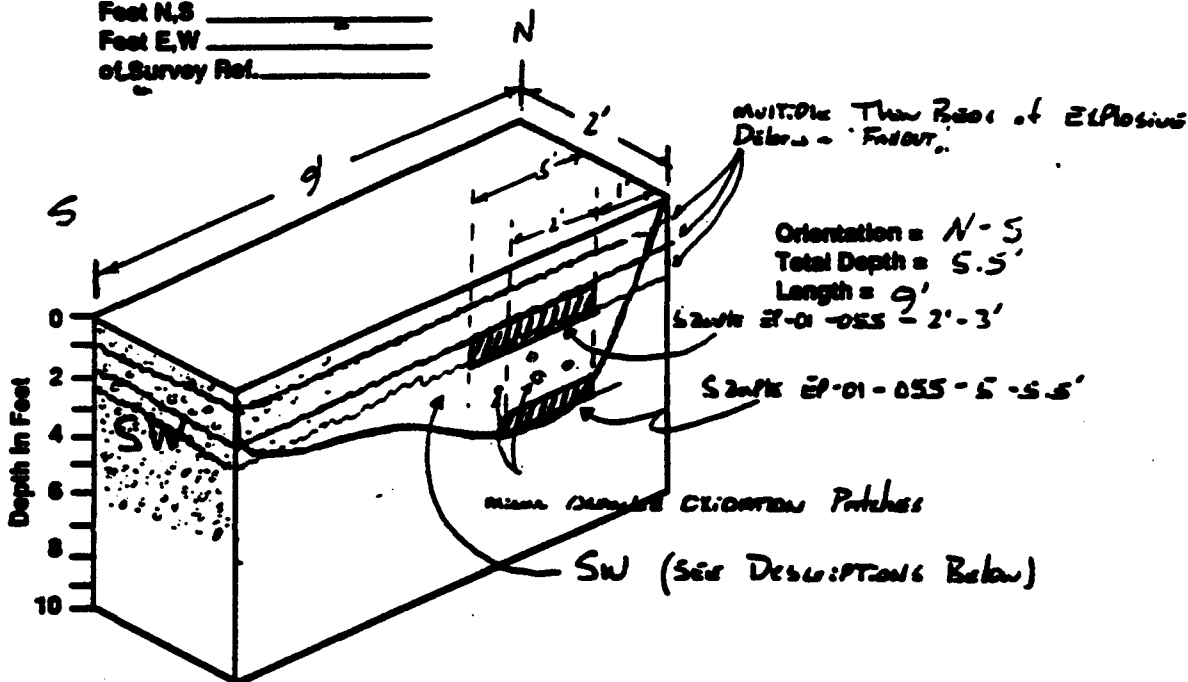
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Drain Line Area 75' Kuppelle / 21' H-Heat  
 TEST PIT LOG: TP EP-01-055  
 DATE EXCAVATED: 6-17-92  
 TIME EXCAVATION BEGAN: 1125  
 WEATHER CONDITIONS: Clear, Light Occasional Breeze from N-W, 65°-70° F.  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-055 -	2'-3'	SW	Very Dark Greenish Brown (2.5 Y 3/2) Moist well-sorted coarse sand w/ gravel; about 75% u. fine to coarse sub-rounded to sub-angular loose sand, about 20% fine to coarse sub-rounded fine rounded gravel; w/ about 5% fines. Soft; Non-Plastic. Strong Reaction w/ HCL.	D.D. ppm
EP-01-055 -	5'-5.5'	SW	Dark Greenish Brown (2.5 Y 4) Moist well-sorted coarse sand w/ gravel; about 75% u. fine to coarse sub-rounded sand; loose. About 15% - 20% sub-rounded fine gravel, < 5% fines; Non-Plastic. Strong Reaction w/ HCL.	D.D. ppm

### Comment:

Minor Multiple Detonation Patches seen in Pit Wall; Top (about) 2' of Pit Composed of inter-layered Gravel Shown Layers of Faint Debris from successive detonations.

JMM

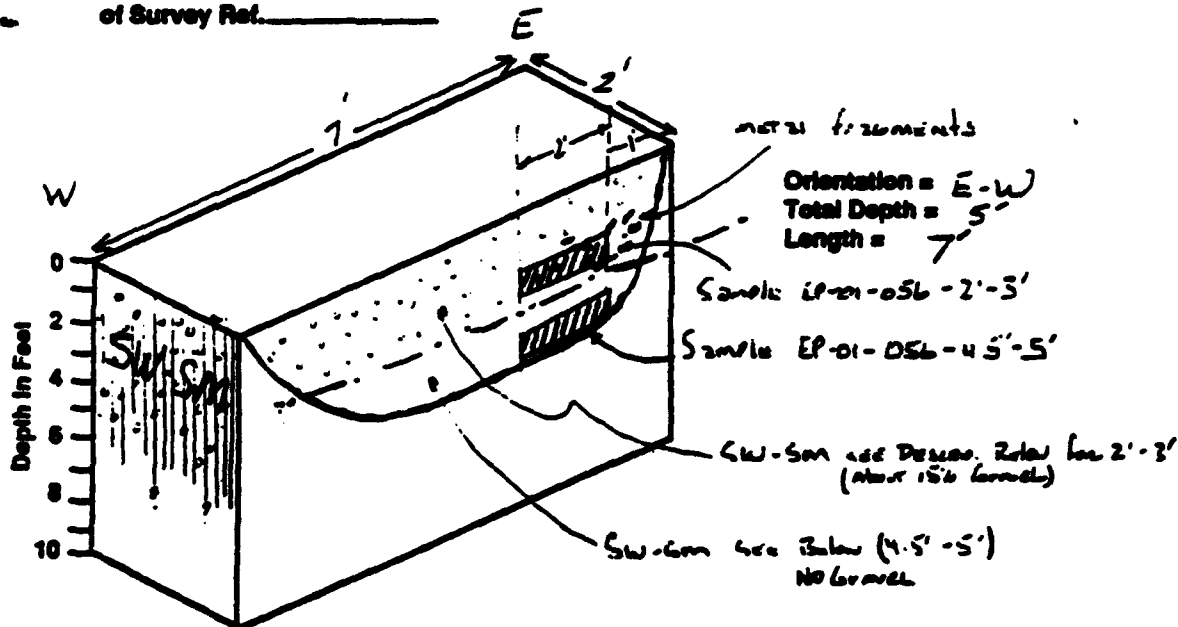


TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Man Demolition Area (D.C. Kuyaville / R.F. Herbert)  
 TEST PIT LOG: TP EP-01-056  
 DATE EXCAVATED: 17 June 1992  
 TIME EXCAVATION BEGAN: 1345  
 WEATHER CONDITIONS: Clear, 65°-70°F, Slight Breeze from E-NE.  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % ll, moisture, plastic)	VOC METER READINGS
EP-01-056-2'-3'		SW-SM	OLIVE GRAY (5Y 5/2) moist well-firmed SAND with SILT and GRAVEL; ABOUT 75% v.f. of coarse well-sorted loose sub-rounded to sub-angular SAND; ABOUT 15% FINE. SUB-ROUNDED to ROUNDED GRAVEL. LARGE. ABOUT 10% FINE. NON-PLASTIC, STIFF.	D.O. PPM
EP-01-056-4'-5'-5'		SW-SM	OLIVE GRAY (5Y 5/2) moist well-sorted SAND with SILT; ABOUT 85% v.f. of coarse, loose sub-rounded to sub-angular SAND; ABOUT 15% FINE. SUB-ROUNDED to ROUNDED GRAVEL. LARGE. ABOUT 10% FINE. NON-PLASTIC, STIFF. NO GRAVEL.	D.O. PPM

Comment:

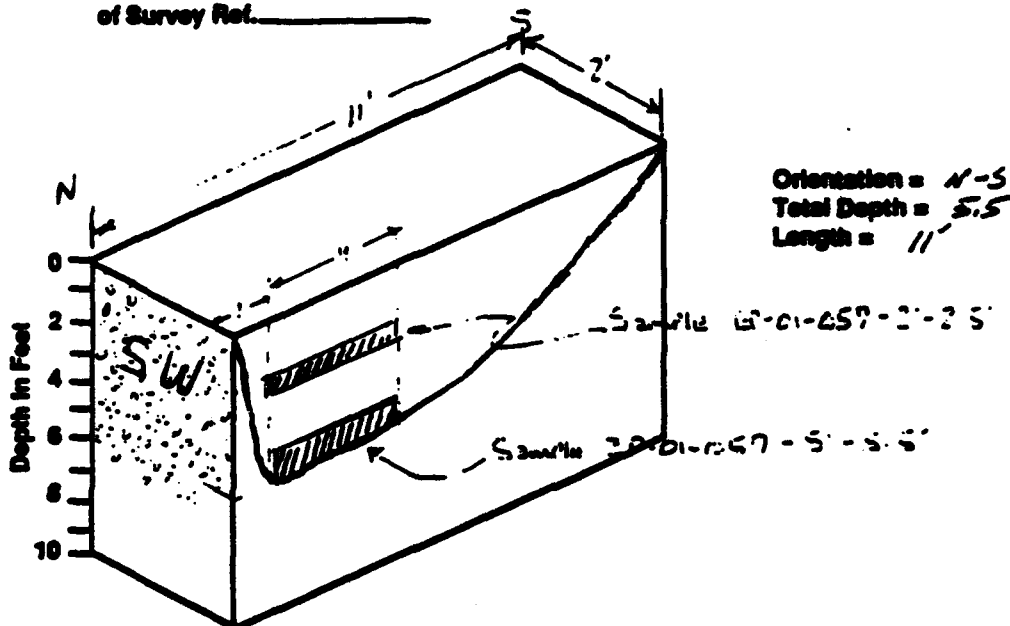
moderately abundant metal chips & fragments present in 2'-3' interval.



# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 Man Dearth Ave T.C. Kuppala / J.F. Herbert  
 TEST PIT LOG: TP EP-01-057  
 DATE EXCAVATED: 17 Jan 1992  
 TIME EXCAVATION BEGAN: 1355  
 WEATHER CONDITIONS: Clear, mild, breeze SW - NE  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Foot N.S. \_\_\_\_\_  
 Foot E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % ll, moisture, plastic)	VOC METER READINGS
EP-01-057-2-2.5'		SW	Dark brown to black (2.5% H <sub>2</sub> O) moist well-sorted sand 1/16" to 1/8" sand; 15% silt to coarse sub-rounded to sub-angular coarse sand; about 30% sand to sub-rounded fine to coarse gravel, w/ 4.5% fines. non-plastic. standard reaction - 1 HCL.	0.0 ppm
EP-01-057-5-5.5'		SW	Dark brown to black (2.5% H <sub>2</sub> O) moist well-sorted sand 1/16" to 1/8" sand; about 15% well-sorted sand 1/16" to 1/8" sand; non-plastic to fine. standard reaction - 1 HCL.	0.0 ppm

Comment:

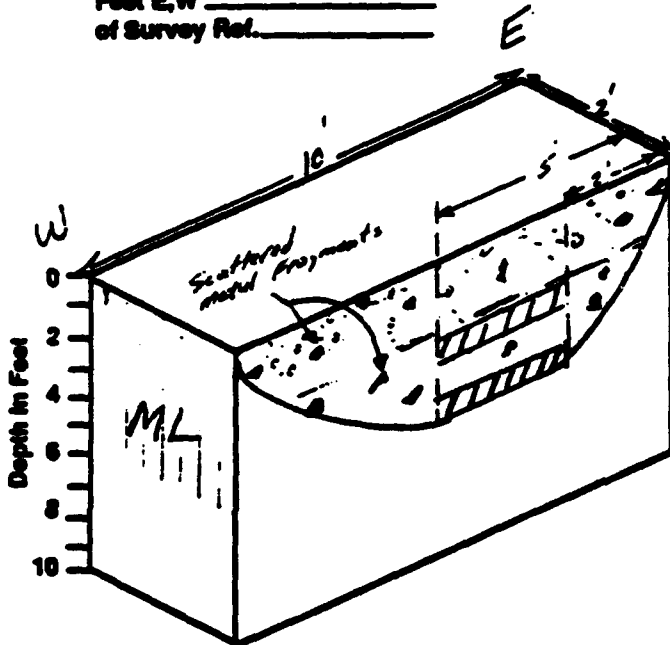
Enclosed are photos of the test pit. Photographs were taken. Material from the test pit.

TEAD-N PHASE I RFI

TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 R.F. Herbert / D.C. Karpich  
 TEST PIT LOG: TP EP-01-058  
 DATE EXCAVATED: 6-18-92  
 TIME EXCAVATION BEGAN: 0810  
 WEATHER CONDITIONS: Clear 76°F 5 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Upper 3' contained 10 to 15% gravel

Orientation = East-West  
 Total Depth = 3.5'  
 Length = 10'

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-058	- 3-3.5'	ML	Gray (10YR 5/1) sandy silt, dry to moist. About 60 to 70% fines, nonplastic, soft. About 30 to 40% well graded very fine to medium subangular to subrounded sand. Less than 5% fine subrounded gravel.	0.0
EP-01-058	- 5-5.5'	ML	Gray (10YR 5/1) moist sandy silt, About 60 to 70% fines, low plasticity, moderately stiff. About 30 to 40% well-graded very fine to medium graded, subangular to subrounded sand. Less than 5% subrounded to subangular gravel.	0.0

**Comment:**

Pit contained scattered metal fragments with orange oxidation stains. Fragments ranged from less than 1/2 inch to 8 inches long. Upper 3 to 4' shows indistinct layering, probably from successive detonations in this crater.

**END**

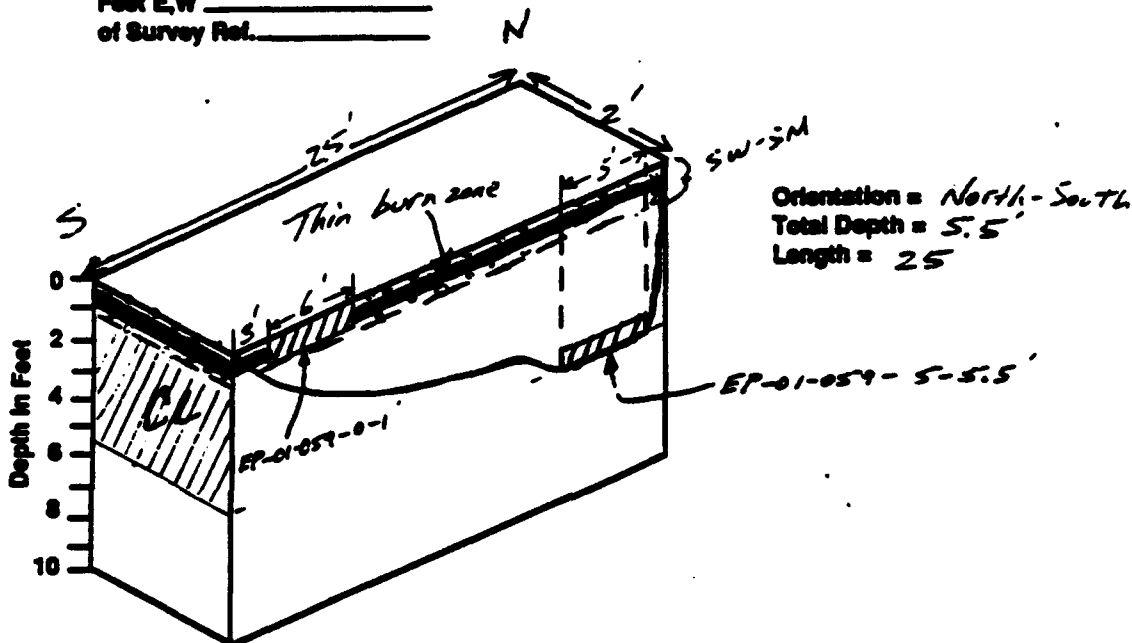


TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 R.F. Herbert / A.C. Kyprieke  
 TEST PIT LOG: TP EP-01-059  
 DATE EXCAVATED: 6-18-92  
 TIME EXCAVATION BEGAN: 0930  
 WEATHER CONDITIONS: clear 75°F, 5-10 mph E wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-059-0-1		SW-SM	Black (10YR 2/1) dry well-graded sand with silt. About 80-90% very fine to coarse subangular to subrounded loose sand. About 10% fines, nonplastic, soft. About 5 to 10% fine subrounded gravel.	0.0
EP-01-059-5-5.5		CL	Light olive brown (2.5Y 5/6) moist lean clay with sand. About 75 to 85% fines, moderately stiff, medium plasticity. About 15 to 25% poorly graded, very fine, subrounded to subangular sand. No gravel.	0.0

Comment:

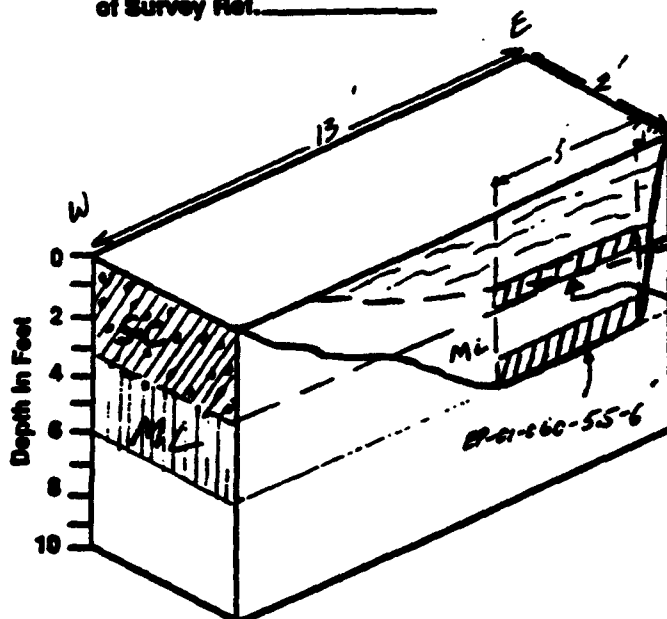
A thin burn zone was evident from about 4 to 10 inches BGS. Burn zone contained abundant charcoal, ash, unburned wood fragments about 1"x4", nails, metal fragments, and abundant orange oxidation stains.

TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 R.F. Herbert / D.C. Kipinski  
 TEST PIT LOG: TP EP-01-060  
 DATE EXCAVATED: 6-18-92  
 TIME EXCAVATION BEGAN: 1215  
 WEATHER CONDITIONS: clear to partly cloudy, 75°F, 16 mph NE wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Orientation = East - West  
 Total Depth = 6'  
 Length = 13'

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-060-2.5-3		SC	very dark grayish brown (10YR 2/2) moist to wet clayey sand. About 50 to 60% well-graded very fine to medium subangular to subrounded loose sand. About 40 to 50% fines low to medium plasticity, soft-mud. stiff.	O.C
EP-01-060-5.5-6		ML	Dark brown (10YR 2/3) moist to wet sandy silt. About 60 to 70% fines, medium plasticity, moderately stiff. About 20 to 40% poorly-graded very fine to fine subangular to subrounded sand.	O.C

**Comment:** Buried trench appears to occur from surface to 4' BGS. This upper 4' is semi-layered soil. Below 4' BGS, soil is structureless. Items encountered in trench include several small metal fragments, a fuse, and a small patch of blue-green oxidation stain.

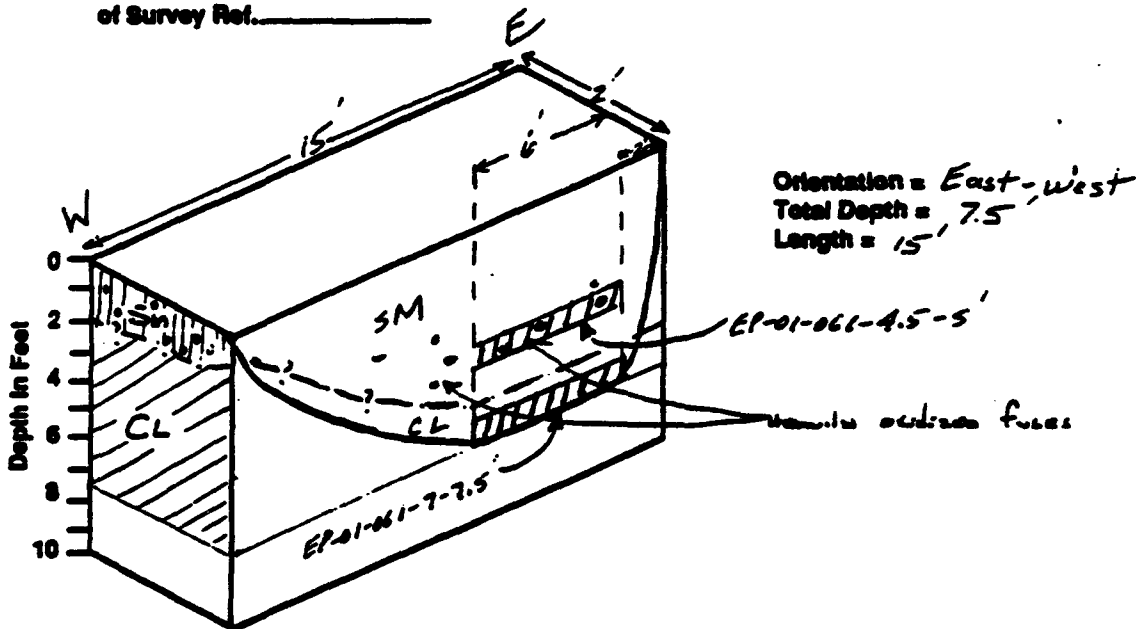


TEAD-N PHASE I RFI



# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 R.E. Herbert / D.C. Kapick  
 TEST PIT LOG: TP EP-01-061  
 DATE EXCAVATED: 6-18-92  
 TIME EXCAVATION BEGAN: 1330  
 WEATHER CONDITIONS: Clear to partly cloudy, 75° F, 5-10 mph NE wind  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-061-4.5-5'		SM	Very dark grayish brown (10YR 3/2) silty sand. Moist, about 70 to 80% well-graded, very fine to coarse, angular to subrounded, loose soft sand. About 15 to 20% fines, non to low plasticity, soft. About 5% fine to coarse subangular-gravel.	0.0
EP-01-061-7-7.5'		CL	Dark brown (10YR 3/3) lean clay with sand. Moist to wet. About 80% to 90% fines, medium plasticity, moderately stiff. About 10-20% poorly-graded, very fine, subangular to subrounded sand. No gravel.	0.0

**Comment:**

Several Fines, Heavy Outlines Present at 4'-5' Bls; some Small Metal Fragments there are upper 4' (Possible) in trench.

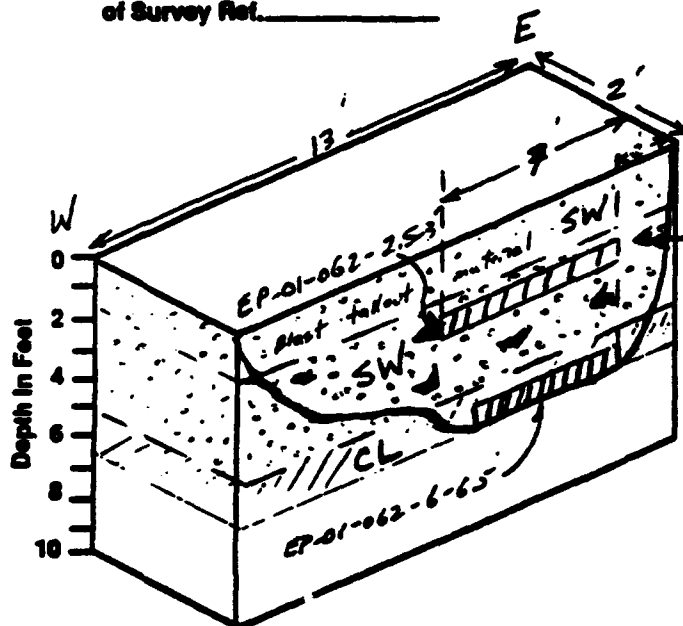
**JMM**



TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition Area DC. Kipula/R.F. Herbert  
 TEST PIT LOG: TP EP-01 - 062  
 DATE EXCAVATED: 23 June 1992  
 TIME EXCAVATION BEGAN: 08:55  
 WEATHER CONDITIONS: Clear, light breeze from SW, 70°F  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SW { see description for 2.5'-3' Below,  
 but same is Cohesive; breaks  
 apart w/ min. effort in t. tests

Orientation = E-W  
 Total Depth = 6.5'  
 Length = 13'

metal fragments

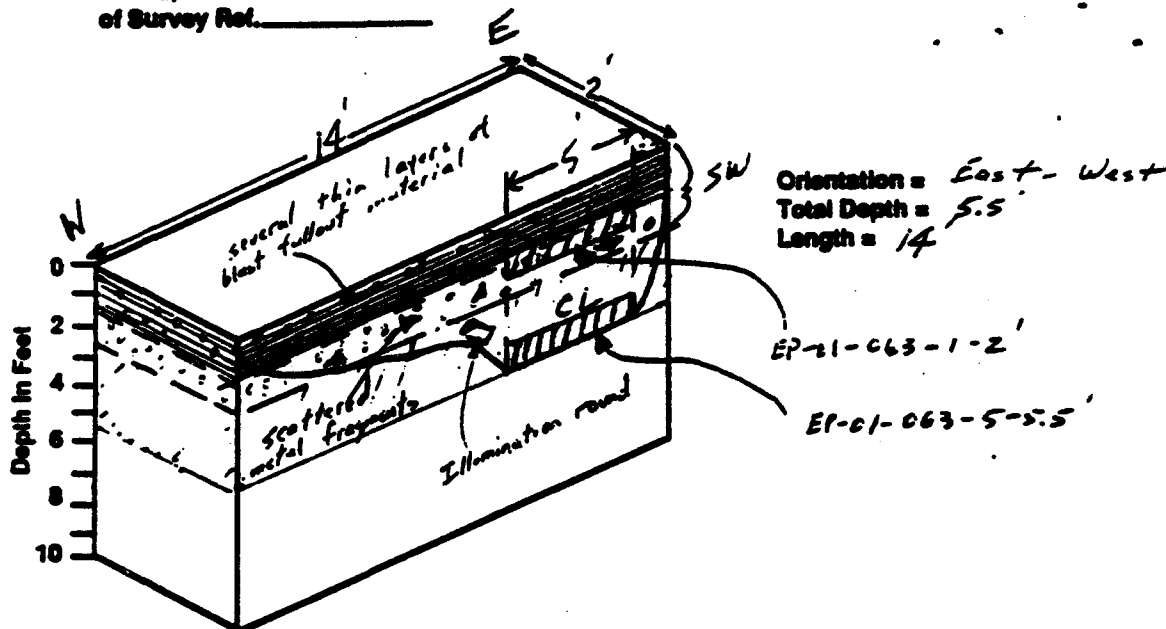
SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-062-2.5-3'		SW	Very Dark Grayish Brown (2.5Y 3/2) moist well-sorted Sand with Gravel; about 95% well-sorted & fine to coarse sub-rounded to sub-angular coarse sand with about 15% to 20% fine sub-rounded to sub-angular coarse gravel. Contains 4.5% fines; Non-plastic, sub-compact, reaction with HCL. none	D.D. ppm
EP-01-062-6'-6.5'		CL	Dark olive Brown (2.5Y 3/2) moist to wet lean clay about 90% fines with to heavy plasticity, non-stiff; about 5% to 10% coarse & fine sub-rounded sand, -100 Gravel. Strong reaction w/ HCL.	D.D. ppm

**Comment:**

Debris encountered included fuse parts, unburned wood fragments, a metal rod, and scattered metal fragments. Iron oxide stains were present but no obvious burn zone.

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1  
 TEST PIT LOG: TP EP-01-063  
 DATE EXCAVATED: 6-23-92  
 TIME EXCAVATION BEGAN: 1000  
 WEATHER CONDITIONS: clear, 75°F, 10 mph W wind  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N, S \_\_\_\_\_  
 Feet E, W \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-063-1-2'		SW	Dark brown (2.5Y 4/1) clay with green sand - 1/4" gravel; about 75% is fine to coarse sand, sub-angular; about 20% fine ch. random to sh. - Amb. & 20% coarse. Random coarse. & 5% fine, loose, non-plastic; loose. soft. Greenish Zoned w/ HCL.	0.0 ppm
EP-01-063-5'-5.5'		CL	Dark olive brown (2.5Y 3/1) sand to silty clay with 1/4" gravel. about 70% - 75% fines, -1/4" to 1/2" plastic; med. stiff to sh. H; about 25% - 30% sand - coarse & fine sub-angular brown sand, w/ 1/4" gravel. Greenish Zoned w/ HCL.	0.0 ppm

**Comment:**

Items encountered included one floor illumination round, one 4 lb. thermite bomb, and scattered metal fragments. No 'burn zone' observed.

**END**

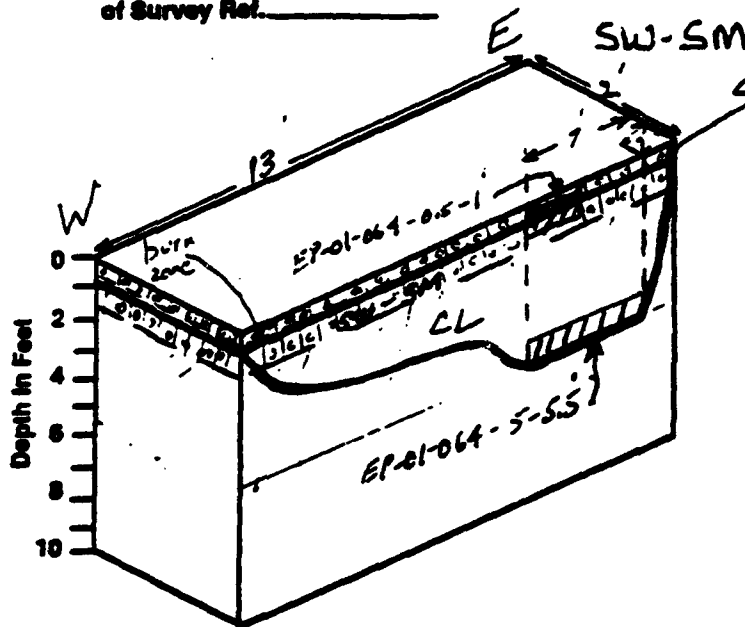


TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 RF. Hitt / O.C. Kipplun  
 TEST PIT LOG: TP EP-01-064  
 DATE EXCAVATED: 6-23-72  
 TIME EXCAVATION BEGAN: 1230  
 WEATHER CONDITIONS: clear 85-90°F 10 mph NE wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



near Dark Clastic Brown (2.5Y 4/2)  
 Dark well-sorted Sand 4-1/2",  
 about 80% u-fine to coarse  
 sub-angular to sub-round. Loose Sand;  
 about 10% fine s. Min. Plastic. Soft.  
 about 10% fine, sub-round Gravel.  
 Orientation = East - West  
 Total Depth = 5.5'  
 Length = 13'

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % fl, moisture, plast)	VOC METER READINGS
EP-01-064-0.5-1		SW-SM	Black (5Y 2.5/1) dry to moist well-sorted sand with silt and gravel. About 65-70% very fine to coarse subangular to subrounded loose sand, loose About 20 to 25% fine rounded to subangular gravel. About 5-10% fines, non plastic soft. Strong ucl reaction.	0.0 PPM
EP-01-064-5-5.5		CL	Dark Olive Brown (2.5Y 4/2) moist Lima CLs with Sand. About 80% fines, med. Plasticity, soft to med. stiff. Contains about 20% u-fine to fine sub-rounded, rounded - coarse Sand, -1 no Gravel. Strong reaction ucl.	0.0 PPM

Comment:

A thin burn zone 2 to 3" thick was observed at 8" B&S. This black ash zone also contained iron oxide residue. No debris was encountered or observed.

JMM

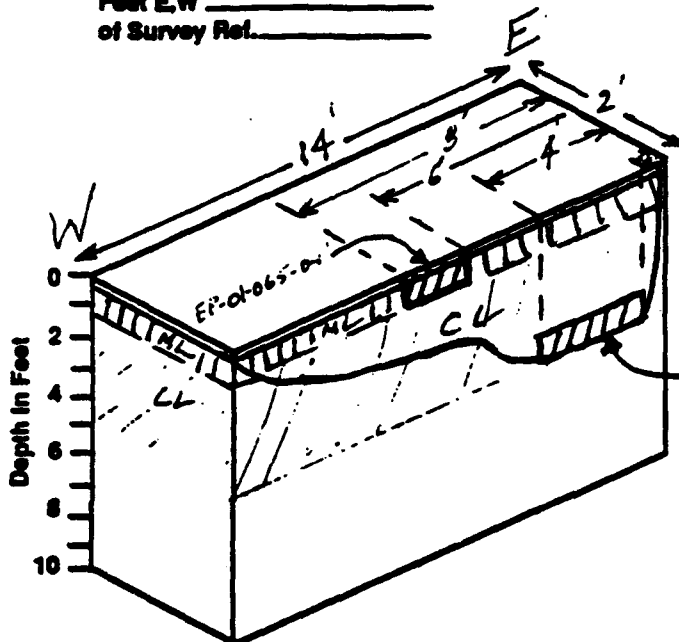


TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 R.F. Herbert / D.C. Krupnick  
 TEST PIT LOG: TP EP-01-065  
 DATE EXCAVATED: 6-23-92  
 TIME EXCAVATION BEGAN: 1340  
 WEATHER CONDITIONS: partly cloudy, 90° F, Slight NE wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Orientation = East - West  
 Total Depth = 5'  
 Length = 14'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plastic)	VOC METER READINGS
EP-01-065-0.1		ML	Very dark gray (SY 3/1) sandy silt with gravel. Dry. Contains about 56-68% fines, medium plasticity, medium stiffness. About 30% well-graded, very fine - coarse, subangular to subrounded sand. About 10-15% fine subrounded gravel. STAGNANT reaction w/ HCL.	0.0 ppm
EP-01-065-4.5-5		CL	VERY Dark Grayish Brown (10YR 3/3) moist. Laminar clay with sand; about 60% fines - med. to high plasticity, med. stiff; contains about 20% coarse to v. fine, sub- to med. poorly-sorted sand. No gravel. STAGNANT reaction w/ HCL.	0.0 ppm

Comment: A very thin burn layer was observed just below the surface. No debris observed. Possibly a propellant burn site (VRO).

JEH



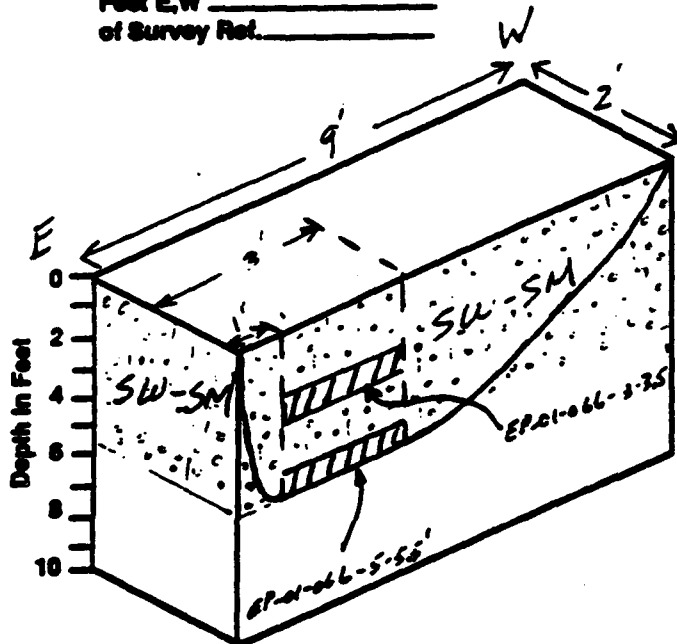
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 R.F. Heister / P.C. Kyzick  
 TEST PIT LOG: TP EP-01-066  
 DATE EXCAVATED: 6-24-92  
 TIME EXCAVATION BEGAN: 0815  
 WEATHER CONDITIONS: Clear to mostly cloudy, 75°, 10-20 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Orientation = East - West  
 Total Depth = 5.5'  
 Length = 9'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-066	3-3.5'	SW-SM	Dark gray (10YR 4/1) dry well-graded sand with silt. About 80-90% very fine to coarse subangular to rounded loose sand. About 10-15% fines, nonplastic, soft. About 5% fine subangular to subrounded gravel.	C.C ppm
EP-01-066	5-5.5'	SW-SM	Dark gray (10YR 4/1) moist well-graded sand with silt. About 80-90% very fine to coarse subangular to subrounded loose sand. About 10-15% fines, nonplastic, soft. Less than 10% fine subangular gravel.	C.C ppm

Comment:

Abundant metal fragments scattered throughout the pit.  
 No burn evidence, no other debris.

JME

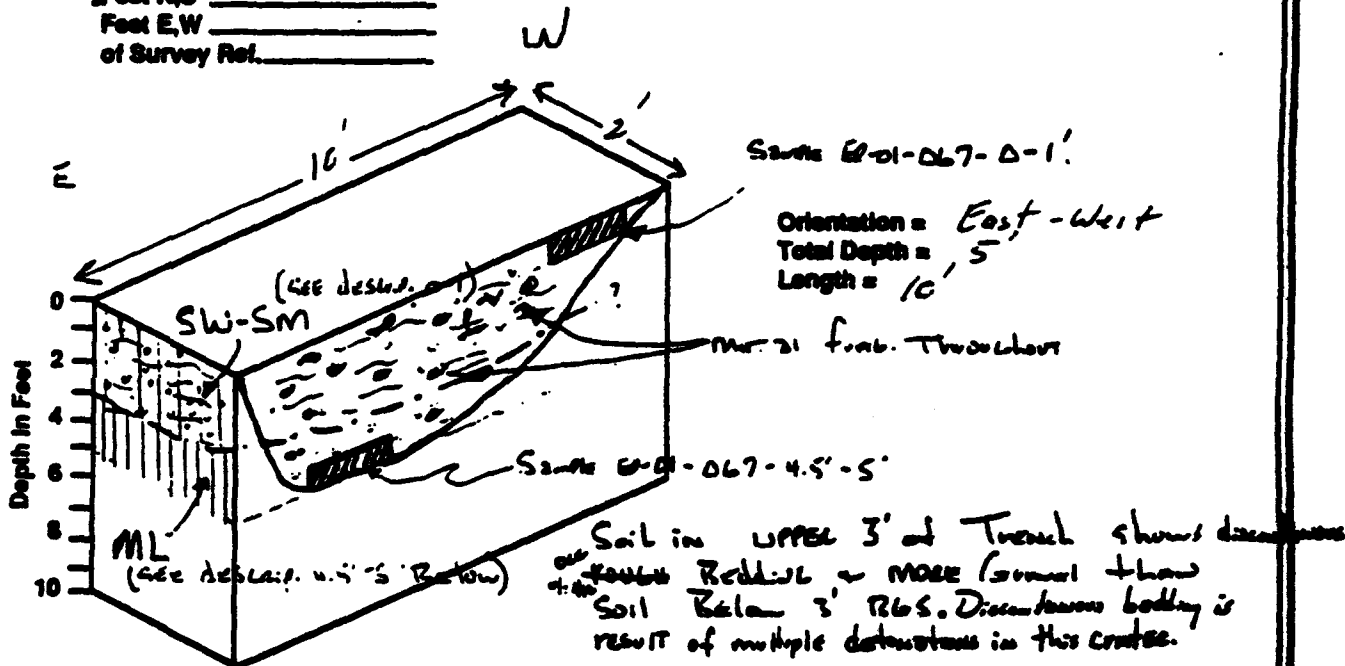


TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 B.F. Herbert / D.C. Krupnik  
 TEST PIT LOG: TP EP-01-067  
 DATE EXCAVATED: 6-24-97  
 TIME EXCAVATION BEGAN: 0925  
 WEATHER CONDITIONS: Clear 80°, 20-30 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-067 - 0-1'		SW-SM	Gray (10YR 5/1) dry well-graded sand with silt. About 80% very fine to coarse, soft, to subrounded sand. About 10% fines, nonplastic, soft, About 10% fine subangular gravel.	0.0 ppm
EP-01-067 - 4.5-5'		ML	Gray (10YR 5/1) dry sandy silt. About 60-70% fines, low plasticity, soft. About 20-40% very fine to medium subangular to subrounded well-graded sand. No gravel.	0.0 ppm

Comment:

ABUNDANT DEGRADED METAL LIME. METAL LIMES IN SIZE LINE (<1" to >8") PRESENT AT ALL DEPTHS IN TRENCH. SOIL SAMPLES OBTAINED ARE USED FINE ("POWDERY") IN NATURE, AND DRY.

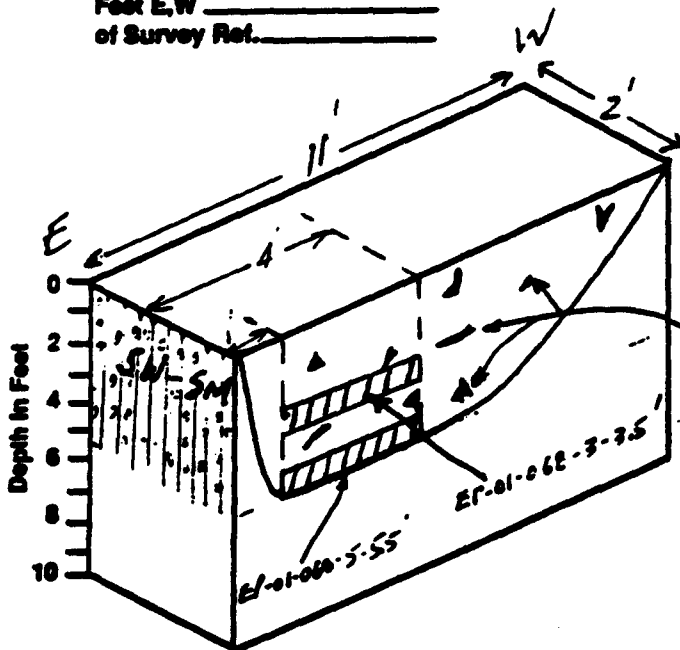
JM



TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

SWMU NO.: 1 R.F. Herbst / D.C. Krupicka  
 TEST PIT LOG: TP EP-01-068  
 DATE EXCAVATED: 6-24-92  
 TIME EXCAVATION BEGAN: 1122  
 WEATHER CONDITIONS: clear to partly cloudy, 86°F, 5-10 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Orientation = East - West  
 Total Depth = 3.5'  
 Length = 11'

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % s, moisture, plast.)	VOC METER READINGS
EP-01-068-3-3.5'		SW-SM	Dark grayish brown (2.5Y 4/2) dry well-graded sand with silt. About 80% very fine to coarse subangular to subrounded loose sand. About 10% fines, soft, nonplastic, loose. About 10% fine subrounded gravel.	0.0 ppm
EP-01-068-5-5.5'		SW-SM	Dark grayish brown (2.5Y 4/2) moist well-graded sand with silt and gravel. About 75% very fine to coarse subangular to subrounded loose sand. About 15% fine subangular to rounded gravel. About 10% fines, soft, nonplastic, loose.	0.0 ppm

Comment:

*Scattered metal fragments throughout pit.*

**JME**

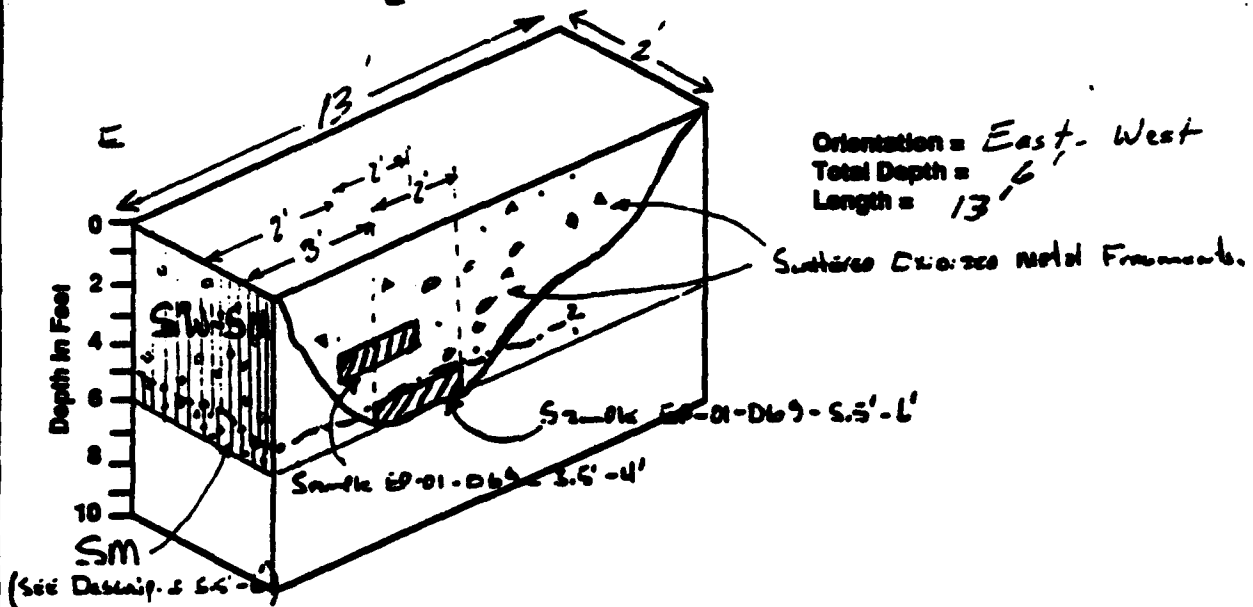


TEAD-N PHASE I RFI



# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 R.F. Heckert / D.C. Karpinski  
 TEST PIT LOG: TP EP-01-069  
 DATE EXCAVATED: 6-24-92  
 TIME EXCAVATION BEGAN: 1225  
 WEATHER CONDITIONS: clear to partly cloudy, 80°F, Slight W wind  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % sa, % f, moisture, plast.)	VOC METER READINGS
EP-01-069 - 3.5-4'		SW-SM	Olive gray (5Y 4/2) moist well-sorted sand with silt and gravel. About 60-70% very fine to coarse subangular to subrounded loose sand. About 20-30% fine subrounded to subangular gravel. About 10% fines, nonplastic, soft, loose.	0.0 ppm
EP-01-069 - 5.5-6'		SM	Olive brown (6.5Y 4/2) moist silty sand. About 60% very fine to coarse subangular to subrounded loose sand. About 30-40% fines, nonplastic, soft, loose. 10% fine subangular gravel.	0.0 ppm

Comment:

Scattered oxidized metal fragments throughout pit.

JEH

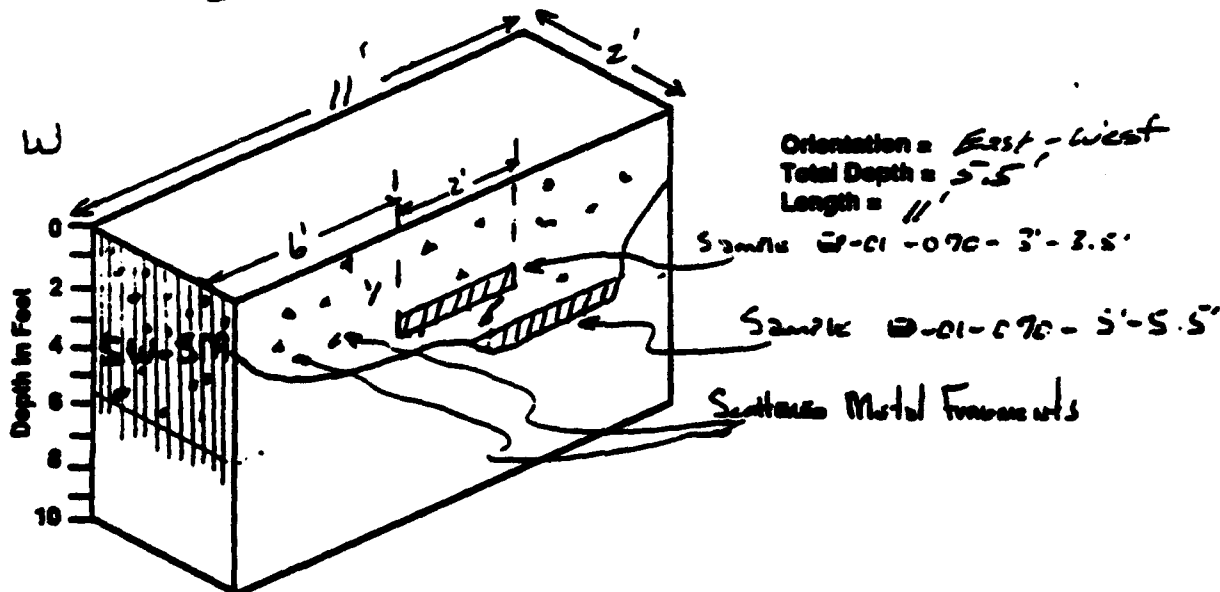


TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 Max Dimension Area D.C. Knapik / R.T. Harbert  
 TEST PIT LOG: TP EP-01-570  
 DATE EXCAVATED: 23 June 1992  
 TIME EXCAVATION BEGAN: 0805  
 WEATHER CONDITIONS: Clear, P.C. 1 70°-75°F, NW Breeze from S.  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % fl, moisture, plastic)	VOC METER READINGS
EP-01-070-3'-3.5'		SW-GM	Dark grayish brown (2.5Y 4/0) moist well-sorted Sand with SILT; about 80% v. fine to coarse sub-angular to sub-rounded loose Sand; about 10% fine sub-rounded gravel; w/ about 10% - 15% fines; non-plastic; S&T; STRONG reaction - 1 HCL.	0.0 ppm
EP-01-070-5'-5.5'		SW-SM	Dark Grayish Brown (2.5Y 4/2) moist well-sorted Sand with SILT; about 80% v. fine to coarse sub-angular to sub-rounded loose Sand; about 10% fine sub-rounded to rounded gravel; about 10% - 15% fines; non-plastic; S&T. appears to contain slightly more clay than 3'-3.5' interval. STRONG reaction - 1 HCL.	0.0 ppm

**Comment:**

Enclosed scattered metal fragments throughout trench, ranging in size from less than 1" to over 12" long. Also abundant unburned wood fragments, and pieces of Plastic & Paper; used as a filler in Explosives found on surface nearby.

JMM

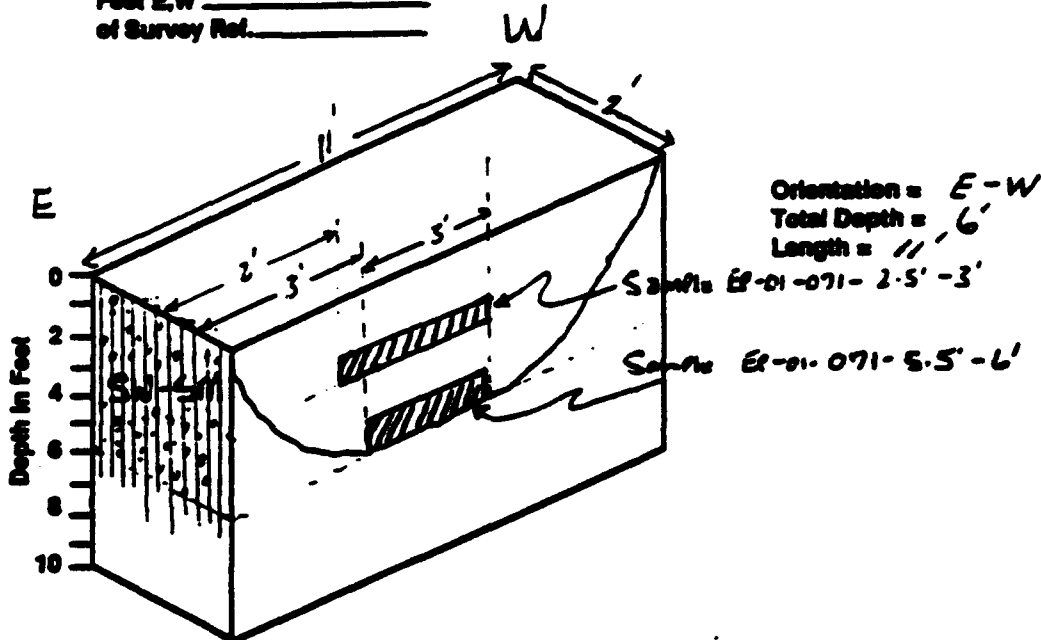


TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 2 Main Demolition Area D.S. Kypala / R.F. Harbort  
 TEST PIT LOG: TP EP-01-071  
 DATE EXCAVATED: 25 June 1992  
 TIME EXCAVATION BEGAN: 0910  
 WEATHER CONDITIONS: Clear, 100% Relative Humidity, 75°F  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (N.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % s, moisture, plastic)	VOC METER READINGS
EP-01-071-2.5'-3'		SW-SM	Dark grayish brown (2.5 Y 4/2) moist well-sorted sand with S.L.T.; about 75% sub-rounded to sub-angular silt; clay to coarse sand; about 10% fine sand; sub-angular to sub-spherical gravel; about 10% fines, non-plastic. Soft to medium reaction - 1 HCL.	0.0 ppm
EP-01-071-5.5'-6'		SW-SM	Dark grayish brown (2.5 Y 4/2) moist well-sorted sand with S.L.T.; about 75% sub-rounded to sub-angular silt; clay to coarse sand; about 10% fine sand; sub-angular to sub-spherical gravel; about 10% fines, non-plastic to low plasticity; soft, loose. STILL REACTION - 1 HCL.	0.0 ppm

**Comment:**

Trench contains abundant metal fragments throughout, as well as scattered unburned wood fragments (broken crates), and electric wire. Several Anne Bows containing WXD wire ENCLOSED.

JME



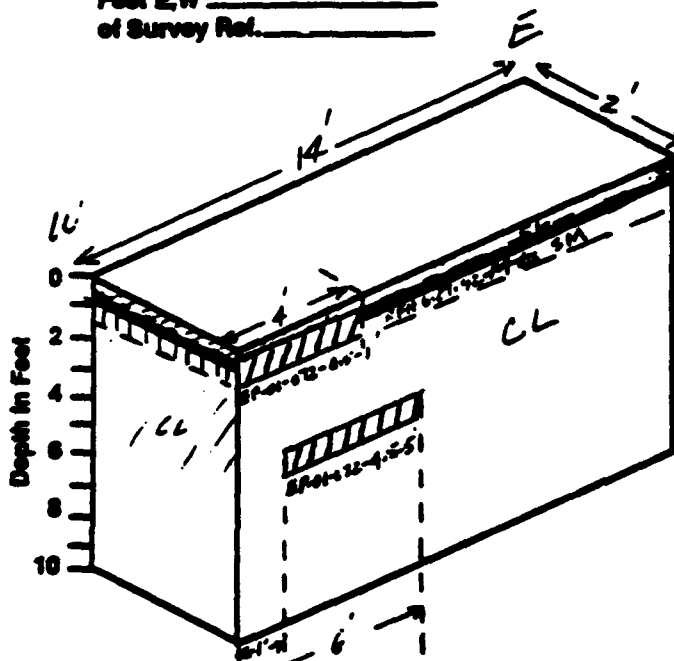
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 E.F. Hartwig / D.C. Krupicka  
 TEST PIT LOG: TP EP-CI-C72  
 DATE EXCAVATED: 6-26-92  
 TIME EXCAVATION BEGAN: 0815  
 WEATHER CONDITIONS: Clear, 78°F, 5-16 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Foot N.S. \_\_\_\_\_  
 Foot E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Dark brown (10YR 3/2) lean clay with sand, dry. About 75-85% fines, medium plasticity, stiff. About 15-25% very fine to medium well-graded, subangular to rounded sand. Less than 5% fine subangular gravel.

East - West RPN

Orientation = North-South 6-26-92  
 Total Depth = 5'  
 Length = 14'

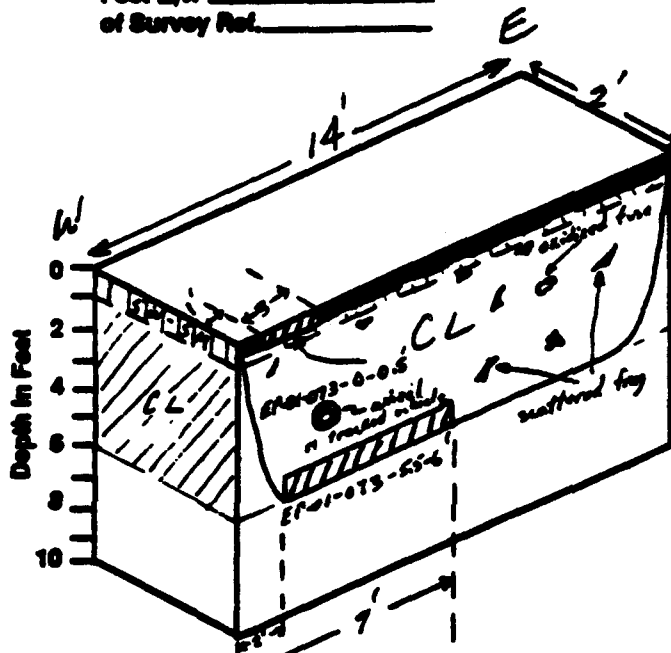
SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-CI-072	<u>0.5-1</u> RPN 6-27-92	<u>SM</u>	Very dark grayish brown (2.5Y 3/2) dry silty sand. About 80% very fine to medium subrounded to rounded fine well-graded sand. About 15-20% fines, low plasticity to nonplastic, soft. About 5% fine subrounded gravel. Abundant ash material and burn residue.	0.0 ppm
EP-CI-072	<u>4.5-5'</u>	<u>CL</u>	Dark brown (10YR 3/2) moist lean clay with sand. About 75-85% fines, medium plasticity, stiff. About 15-25% very fine poorly-graded, subangular to subrounded sand. No gravel.	0.0 ppm

Comment: A thin burn zone was encountered from 4-8" B&S. Abundant  
ash, BLU 26 bandlet fines, charcoal, and metal slag were  
contained within the burn zone.



# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 R.E. Herbert / D.C. Karpis  
 TEST PIT LOG: TP EP-01-073  
 DATE EXCAVATED: 6-26-92  
 TIME EXCAVATION BEGAN: 0926  
 WEATHER CONDITIONS: Partly cloudy, 75° F, 5 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Orientation = East - West R.M. 6-26-92  
 Total Depth = 6'  
 Length = 14'

SAMPLE NO.	SAMPLE LOCATION (IL)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % s, moisture, plast.)	VOC METER READINGS
EP-01-073	- 0-0.5'	SW-SM	Very dark gray (10 YR 3/1) dry, well-graded sand with silt and gravel. About 75% very fine to coarse subangular to rounded loose sand. About 15% fine subangular to subrounded gravel. About 10% fines, nonplastic, silt, loess.	C.O ppm
EP-01-073	- 5.5-6'	CL	Dark brown (10 YR 3/5) moist lean clay with sand. About 75-85% fines, medium plasticity, stiff. About 15-25% very fine poorly-graded subangular to subrounded sand. No gravel.	C.O ppm

**Comments:** A burn zone was observed from just below the ground surface to about 6" BGS. Abundant nails and metal fragments were within burn zone. At about 4' BGS, an oxidized partial wheel of a tracked vehicle, possibly Sherman tank (WAB). Also, an oxidized fuse was observed from 2-3' BGS.

**END**



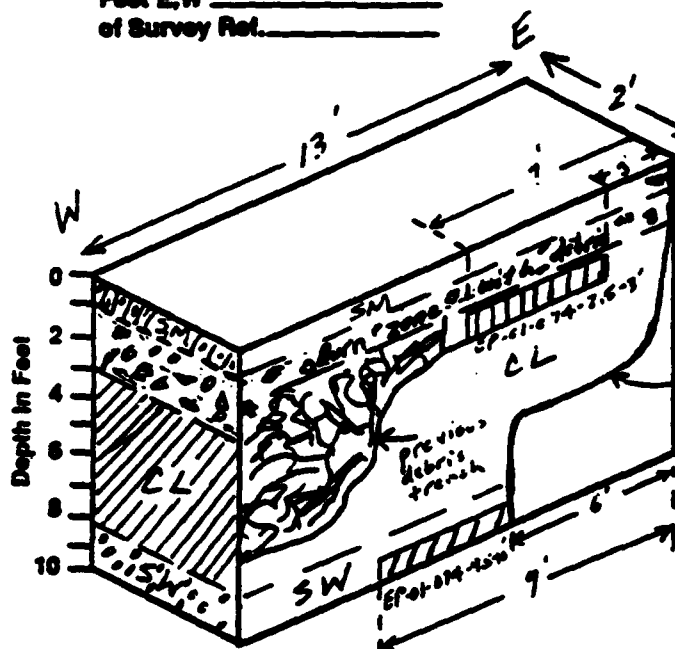
**TEAD-N PHASE I RFI**

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 R.E. Herbert / D.C. Kyparska  
 TEST PIT LOG: TP EP-01-074  
 DATE EXCAVATED: 6-26-92  
 TIME EXCAVATION BEGAN: 1045  
 WEATHER CONDITIONS: Overcast 80° F, Variable 5-10 mph winds  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Very dark grayish brown (10YR 2/2) silty sandy sand. About 60% very fine to medium subangular to subrounded well-sorted loose sand. About 30% fines, low plasticity, soft. About 10% fine subrounded to subangular gravel.  
 Orientation = East - West  
 Total Depth = 10'  
 Length = 13'

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % sa, % f, moisture, plast.)	VOC METER READINGS
EP-01-074-2.5-3'		CL	very dark grayish brown (2.5Y 3/2) moist sandy lean clay. About 60-70% fines medium plasticity, moderately stiff to stiff. About 20-40% very fine to fine poorly graded subangular to subrounded sand. No gravel.	0.0 ppm
EP-01-074-9.5-10		SW	Dark olive brown (2.5Y 3/2) moist well-sorted sand with gravel. About 60-70% very fine to coarse subangular to rounded loose sand. About 20-25% fine to coarse subrounded to rounded gravel. About 5% fines, nonplastic, soft.	0.6 ppm

### Comment:

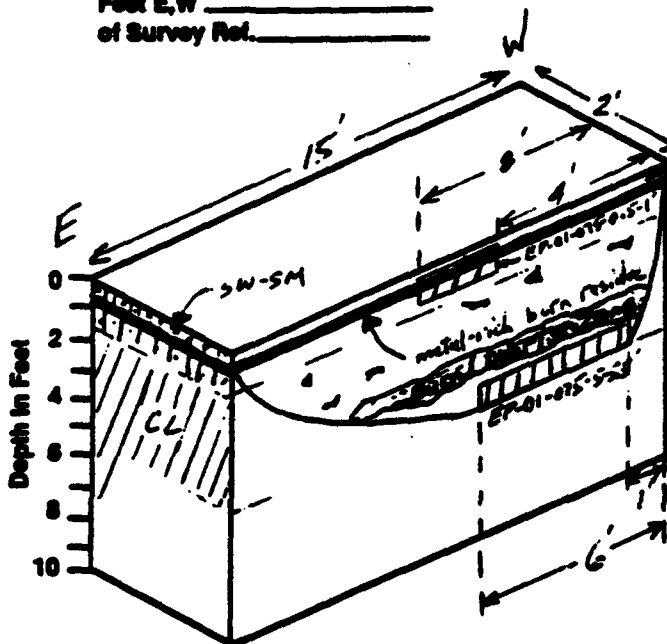
At 1' BGS encountered distinct burn/debris zone thickening to west, containing unburned wood, wood charcoal, bonding material, ammo box, metal ammunition, heavy metal chain, initiation charge plug, abundant oxidized metal fragments, bluish-white aluminum fuse residue, angle iron, plastic cap and plastic sleeve liner, bright red oxidized residue.

On the west end of the pit, a 4' wide previous debris trench was encountered at about 2.5-3' BGS. Abundant metal debris including strapping material as well as large pieces of unburned wood.

TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1  
 TEST PIT LOG: TP EP-01-075  
 DATE EXCAVATED: 6-26-92  
 TIME EXCAVATION BEGAN: 1350  
 WEATHER CONDITIONS: Clear, 80°F, 5-10 mph S wind  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N/S \_\_\_\_\_  
 Feet E/W \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-075-0.5-1'		SM (ash)	Black (10YR 2/1) dry silty sand. About 80% very fine to coarse subangular to rounded loose sand. About 20% fines, nonplastic, soft, loose. Abundant ash and charcoal.	0.0 ppm
EP-01-075-5.5.5'		CL	Dark brown (10YR 3/3) moist loam clay with sand. About 75-85% fines, medium plasticity, stiff. About 15-25% very fine poorly-graded subangular to subrounded sand. No gravel.	0.0 ppm

**Comment:**

A shallow burn zone was encountered from 0.5 to 1' BGS. This zone was composed of metal-rich burn residue and charcoal. A deeper burn zone was encountered from 4 to 5' BGS. This zone appeared to slope southward and also appeared to be comprised of metal-rich burn residue.

Oxidized iron fragments and aluminum fuse parts scattered throughout.

TEAD-N PHASE I RFI

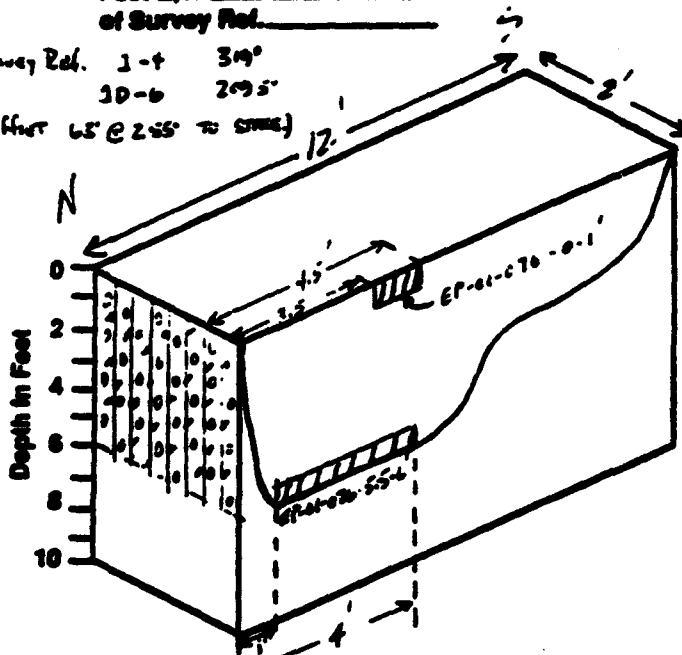
# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Damulation Area  
 TEST PIT LOG: TP EP-01-076  
 DATE EXCAVATED: 6-28-92  
 TIME EXCAVATION BEGAN: 1405  
 WEATHER CONDITIONS: Partly cloudy 90°F, 10-20 mph E wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

Survey Ref. 1-t 34°  
 2D-b 2095°  
 (offset 65' @ 255° to center)



Orientation = North-South  
 Total Depth = 6  
 Length = 12'

SAMPLE NO.	SAMPLE LOCATION (L)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % sa, % fl, moisture, plastic)	VOC METER READINGS
EP-01-076	- 0-1'	SW-SM	Very dark gray (2.5Y 3/1) dry well-graded sand with silt and gravel. About 70% very fine to coarse subangular to rounded loose sand. About 30% fine subrounded to rounded gravel. About 10% fines, soft, nonplastic.	0.0 ppm
EP-01-076	- 5.5-6'	SW-SM	Dark grayish brown (2.5Y 4/2) moist well-graded sand with silt and gravel. About 70% very fine to coarse subangular to subrounded loose sand. About 20% fine subrounded gravel. About 10% fines, soft, nonplastic.	0.0 ppm

## Comment:

Scattered metal fragments throughout pit. Trench is completely in disturbed soils; showing faint, discontinuous bedding, which has resulted from multiple past detonation events.

Trench is located at Bottom of Large Crater. This location has not been used for detonations for several years.

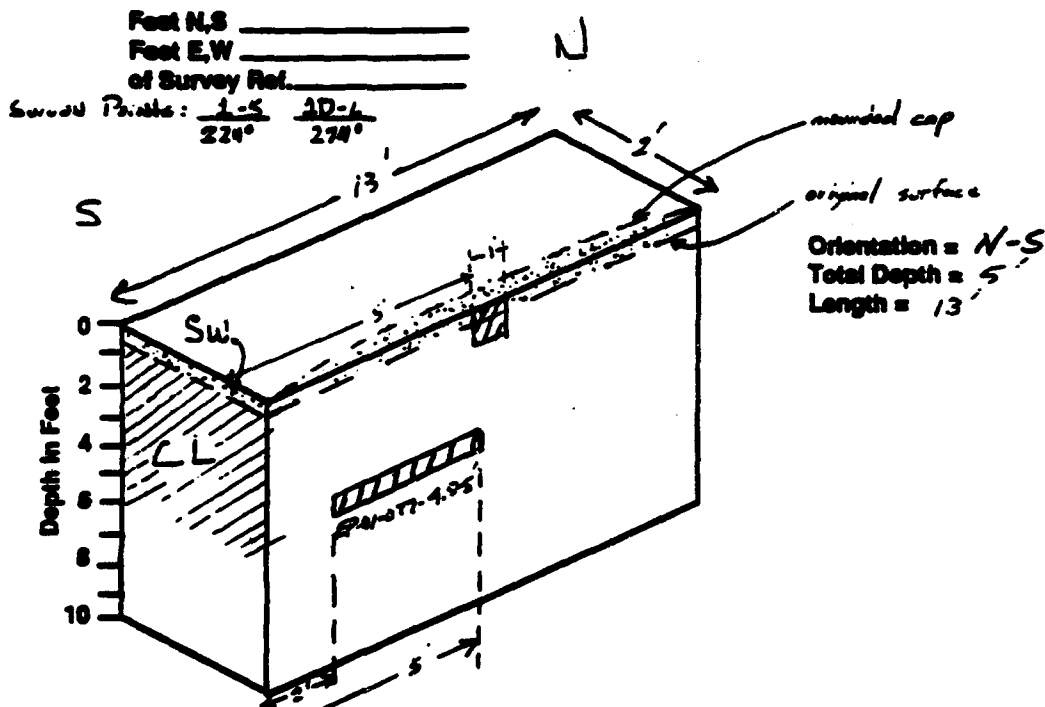
TEAD-N PHASE I RFI



# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Denial Area Dr. Koppitz / Dr. Habert  
 TEST PIT LOG: TP EP-01-C77  
 DATE EXCAVATED: 6/25/92  
 TIME EXCAVATION BEGAN: 0845  
 WEATHER CONDITIONS: Cloudy Wind Force 4-6 70-80 mph.  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % cl, moisture, plast.)	VOC METER READINGS
EP-01-C77 - C-1'		SW	Dark Brown Brown (2.5Y 3/2) dry weak - Gravelly Sand; abundant plant roots; some - moderate U. f. s. s. type, and some - sandy loam; medium - some compact medium. Most 5% fines. Sub-rounded to rounded pebbles - coarse sand. No gravel. Some reaction - 1/100.	C.C ppm
EP-01-C77 - 4.5'-5'		CL	Dark Brown (10YR 3/2) moist loam clay with sand; about 75% - 70% fines, med. Plasticity, moderate st. fl. about 25% - 30% U. f. s. s. to fine sub-rounded to rounded pebbles - coarse sand. No gravel. Some reaction - 1/100.	O.D ppm.

Comment: No debris or Brown Residue encountered at this location. Sample from 0-1' interval contained abundant plant (weed) roots.



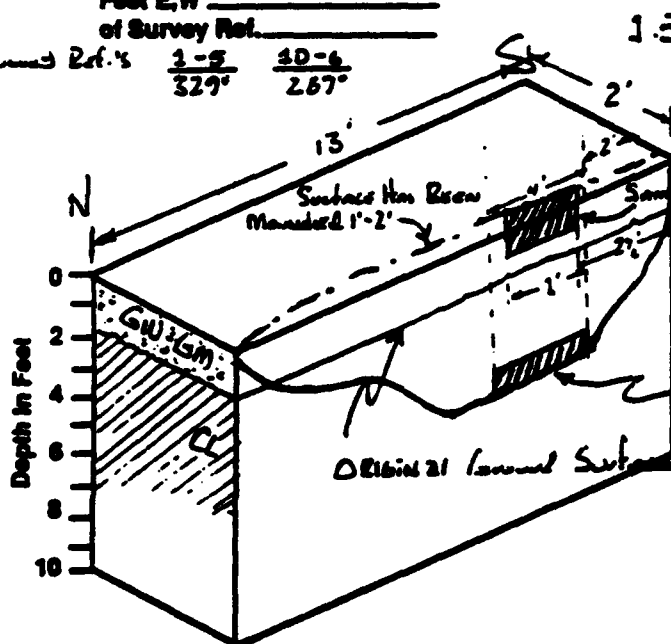
# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 R.F. Harbert / D.C. Krupar  
 TEST PIT LOG: TP EP-CI-C7A  
 DATE EXCAVATED: 6-29-92  
 TIME EXCAVATION BEGAN: 10:00  
 WEATHER CONDITIONS: Overcast 76°F, 30-40 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

Survey Ref. 1-5 30-6  
 329° 267°



1.5'-2.5' B65  
 = CL

Dark Brown (10YR 3/1) moist clay  
 Lenses clay: about 80% fines w/ med.  
 to high plasticity; med. stiff; about  
 10% fine to fine sub-rounded  
 sand - coarse sand; no gravel. some  
 clasts - 1/4\"

Orientation = North - South  
 Total Depth = 5.5'  
 Length = 13'

Sample EP-01-C7A-5-5.5'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-C7A	-C-1'	GW-GM	Dark yellowish brown (10YR 3/1) dry well-sorted gravel w/ 16% fines; about 50% fine to coarse rounded to sub-rounded lenses gravel; about 40-45% fines to coarse sub-rounded sand, well-sorted; about 50-60% fines w/ med. plasticity; soft. STS 6 reaction w/ HCL. No sub-rounded clasts.	C.O ppm
EP-01-C7A	-5-5.5'	CL	Dark Brown (10YR 3/1) moist clay w/ med. sand; about 20-30% fines, med. plasticity, med. stiff; about 20-30% fine to fine sand - coarse sand - rounded sand. No gravel. STS 6 reaction w/ HCL.	C.C ppm

Comment:

No debris or hard residue at this location.

JM



TEAD-N PHASE I RFI

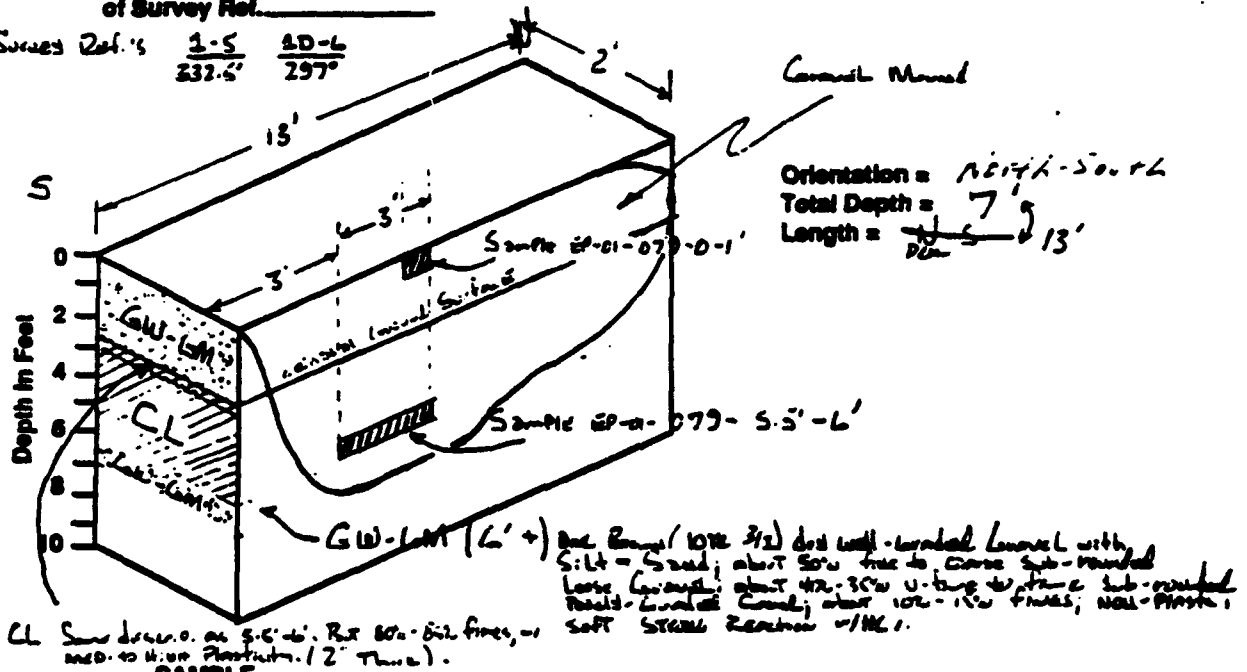
# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 E.F. Harker / D. K. Ruppel  
 TEST PIT LOG: TP EP-01-079  
 DATE EXCAVATED: 6-29-92  
 TIME EXCAVATION BEGAN: 1:15  
 WEATHER CONDITIONS: Cloudy 61°F 30-40 mph 24 miles  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

Survey Ref. 's 2-5 AD-6  
232.5' 297'



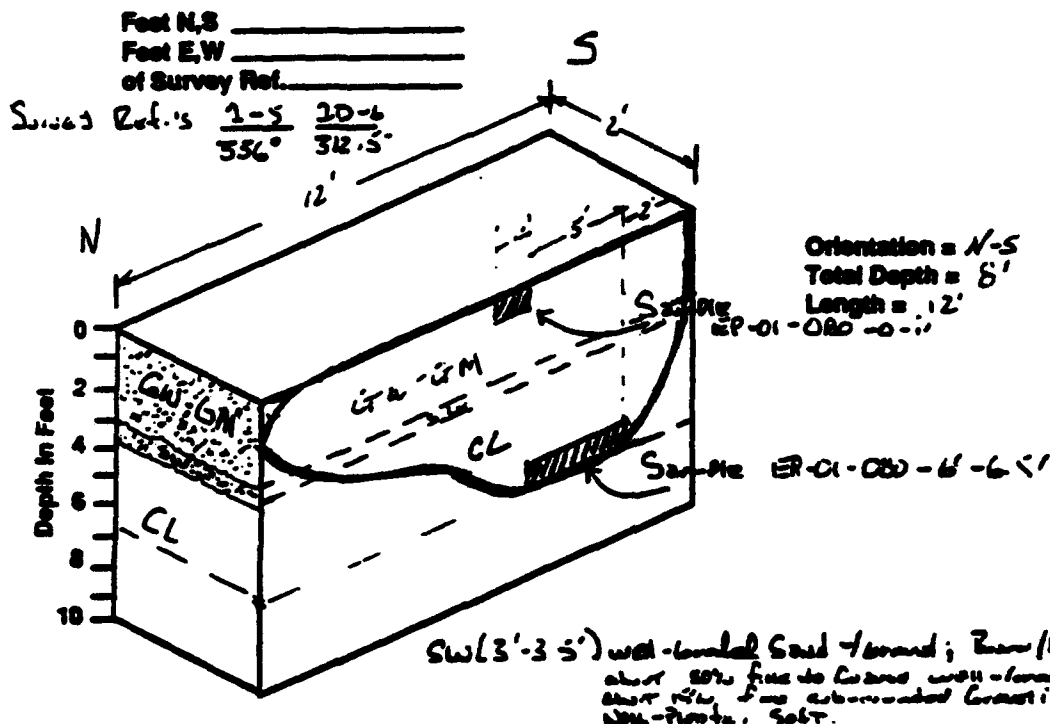
SAMPLE NO.	LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS	VOC METER READINGS
			(color, % gr, % ss, % s, moisture, plast.)	
EP-01-079-0-1'		GW-LM	Dark Brown (10YR 3/2) dry well-sorted gravel with silt and sand; about 50% fine to coarse; rounded to sub-rounded. Loose gravelly, about 40% U. fine to coarse well-sorted, lower sand, rounded to sub-rounded. About 10% fines, non-plastic, soft. Shrinkage reaction - MCL.	D.D ppm
EP-01-079-5.5'-6'		CL	Dark Brown (10YR 3/2) dry sandy loam clay - w/ gravel; about 60% silt fines, med. plasticity; med. stiff to stiff; about 30-35% U. fine to fine. Gravelly silt-rounded sand; about 15% fine sub-rounded to sub-angular gravel. Shrinkage reaction - MCL.	D.D ppm

Comment: No debris or burn residue at this location.



# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1 Main Distribution Area  
 TEST PIT LOG: TP EP-01-080  
 DATE EXCAVATED: 27 June 1992  
 TIME EXCAVATION BEGAN: 1250  
 WEATHER CONDITIONS: Overcast Windy (10-15 mph)  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-080-0-1'		GM-LM	Dark Brown (10% S/S) dry wet-laminated Gravel w/6:LT & Sand; about 50% fine to coarse, sub-angular to rounded loose Gravel; about 10% v. fine to coarse well-laminated sub-angular Sand, Lentic; about 5% fines - non-plastic. Silt. STRENGTH reaction -1 MCL.	D.D PPM
EP-01-080-6'-6.5'		CL	Dark Brown (10% S/S) moist lean CL to USG, about 95% fines, med. to heavy plasticity; med. stiff; about 2% v. fine, Plastic-laminated, subangular sand. STRENGTH Reaction -1 MCL. No Corrosion.	D.D PPM

Comment:

*No debris or hard material observed.*

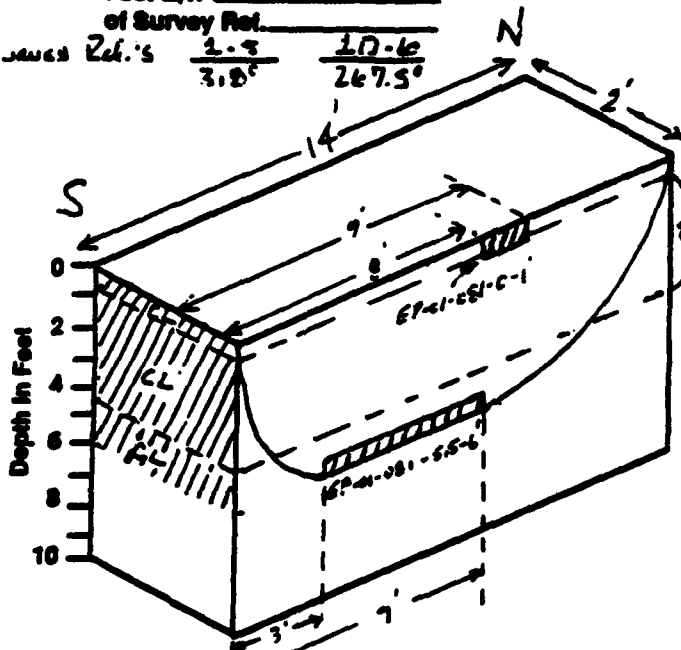


# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 R.E. Hutton / Al Kuzinika  
 TEST PIT LOG: TP EP-CI-CF1  
 DATE EXCAVATED: 6-28-92  
 TIME EXCAVATION BEGAN: 0845  
 WEATHER CONDITIONS: Rainy, 60°F, Slight variable wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_  
 Smeared Ref.'s  $\frac{2.9}{3.8}$   $\frac{17.6}{267.5}$



Orientation = North - South  
 Total Depth = 6'  
 Length = 14'

Very dark grayish brown (10YR 7/2)  
 lean clay with sand. Moist,  
 about 60% fines, medium to  
 high plasticity, moderately stiff.  
 About 25% poorly-graded very fine  
 subrounded to subangular sand.  
 No gravel.

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-CI-CF1-C-1	-C-1	CL	Dark grayish brown (10YR 7/2) dry lean clay with sand. About 60% fines, medium to high plasticity, stiff. About 25% poorly-graded, very fine, subrounded to subangular sand. No gravel.	0.0 ppm
EP-CI-CF1-S-5-6	S-5-6	CL	Dark yellowish brown (10YR 7/4) moist sandy lean clay. About 60 to 75% fines, medium plasticity moderately stiff. About 25 to 40% very fine to fine poorly-graded subangular to subrounded sand. No gravel.	0.0 ppm

Comment:

No debris or evidence of burning observed

JME



TEAD-N PHASE I RFI

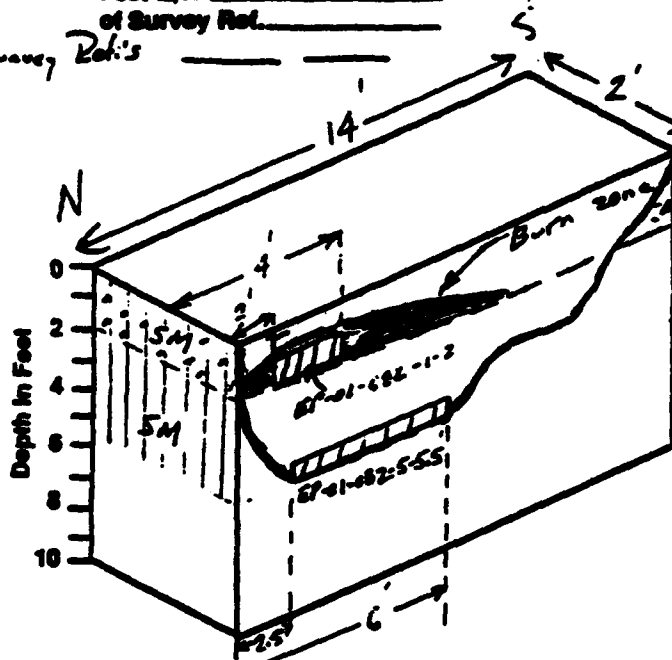
# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 R.E. Murray / D.C. Kozicki  
 TEST PIT LOG: TP EP-C1-CE2  
 DATE EXCAVATED: 6-30-92  
 TIME EXCAVATION BEGAN: 6:57  
 WEATHER CONDITIONS: Clearcast EC'E 5 mph SW winds  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

Survey Ref's \_\_\_\_\_



Very dark grayish brown (10YR 4/2)  
 dry silty sand with gravel. About  
 60-70% fines - coarse well-graded  
 subangular to subrounded sand. About  
 25% fine subangular gravel. About 0% fines on sand.  
 Orientation = North - S. + 6.  
 Total Depth = 5.5'  
 Length = 14'

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plant.)	VOC METER READINGS
EP-C1-CE2	1-2'	ASH	Black (10YR 4/1) moist ash. About 60% well-graded incinerated sand, very fine to coarse, angular to subrounded. About 25% fines, soft, inorganic.	C.C ppm
EP-C1-CE2	5-5.5'	SM	Brown (10YR 5/3) moist silty sand. About 65% very fine to fine poorly-graded subangular to subrounded, loose sand. About 25% fines, soft, inorganic.	C.C ppm

### Comment:

A black burn zone was encountered from 1-2' BGS. Abundant charcoal, nails, and some unburned wood were in this zone.

JME



TEAD-N PHASE I RFI

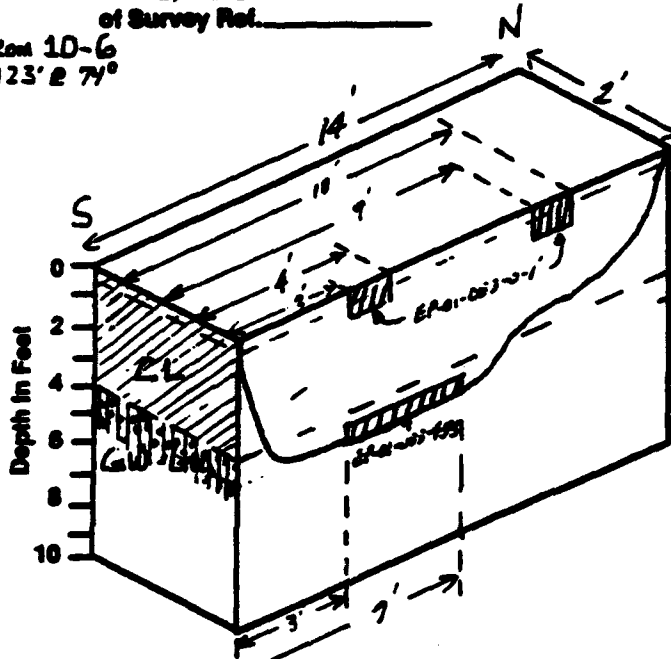
# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1d R.E. Hester / D.C. Kingma  
 TEST PIT LOG: TP EP-01-083  
 DATE EXCAVATED: 1-27-92  
 TIME EXCAVATION BEGAN: 0820  
 WEATHER CONDITIONS: overcast 70° F, 10-15 mph SE wind  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N/S \_\_\_\_\_  
 Feet E/W \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

From 1D-6  
 123° E 74°



Orientation = North - South  
 Total Depth = 5'  
 Length = 14'

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % s, moisture, plast.)	VOC METER READINGS
EP-01-083-0-1'		CL	Very Dark (reddish Brown) (2.5Y 3/2) fine Sand to Lean Clay; about 60% fines; med. Plastic, med. Shrink; also contains a fine to fine sub-rounded to sub-angular feldspar - coarse Sand also in sub-rounded fine (angular) stones & pebbles - 1/4" to 1/2".	0.0 ppm
EP-01-083-4.5-5'		LW-LM	Dark Brown (2.5Y 4/6) moist well-sorted gravel with LT & med; about 50% fines to coarse sub-rounded to rounded; loose Gravel; about 40% fines to coarse sub-rounded well-sorted Sand; about 10% fines, med. Plastic, 60-65. Shrinkage reaction - 1/4" to 1/2".	0.0 ppm

## Comment:

No debris encountered - Top 2' - 2" of ground surface has been disturbed by heavy vehicle traffic; has "taken Powder" consistently. Visible Proportional Barre visible at Surface.

JMM



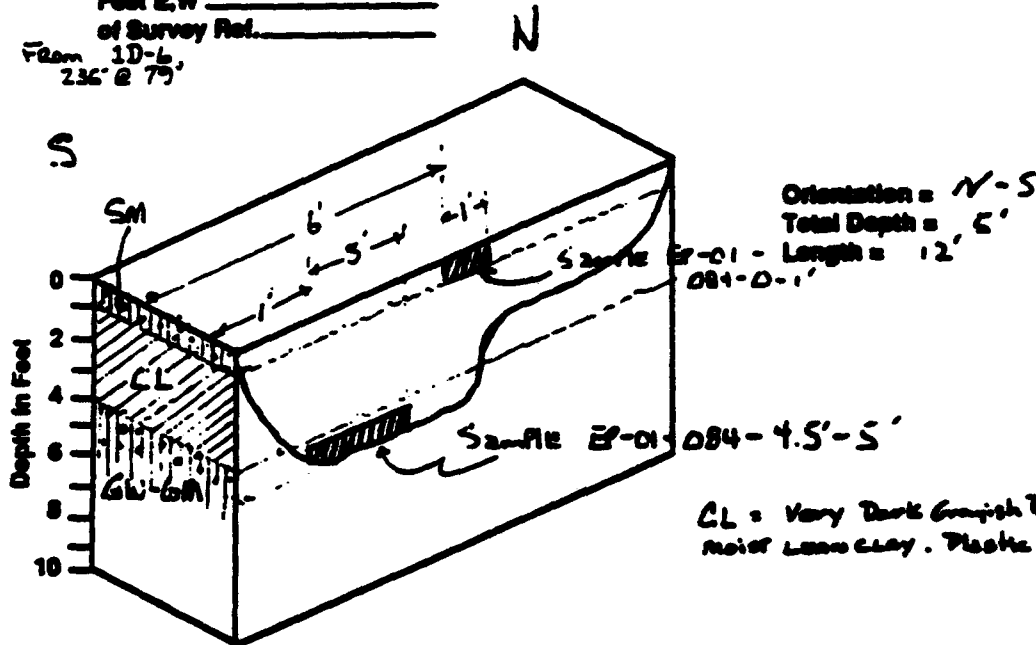
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWHU NO.: 2d Paralled Run Pans  
 TEST PIT LOG: TP EP-01 - 084  
 DATE EXCAVATED: 1/22/82  
 TIME EXCAVATION BEGAN: 6:00 PM  
 WEATHER CONDITIONS: P. Cloudy, 75° F. - 60° F.  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_  
 From 1D-6  
236' @ 79'



CL = Very Dark Grayish Brown (10yr 4%)  
 moist lean clay. Plastic, med-stiff

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-084 -	0-1'	SM	Very Dark Grayish Brown (2.5Y 2/2) moist SILTY Sand, about 20% fine to fine sand - coarse sub-rounded sand, about 30% - 40% fines, non-to low plastic, w/lt, soil to med. stiff, w/lt 5% fine gravel. STONE Zonation - 1/4" to 1/2".	D.D. ppm
EP-01-084 -	4.5' - 5'	GW-GM	Dark Yellowish Brown (10YR 4/4) moist with coarse gravel with silt and sand. About 20% - 30% fine to coarse sub-rounded to rounded large gravel, about 20% - 30% fine to very fine sub-rounded sand - coarse sand, about 10% - 15% fines, non-plastic, soft. STONE Zonation - 1/4" to 1/2".	D.D. ppm

Comment: No debris encountered at this location.





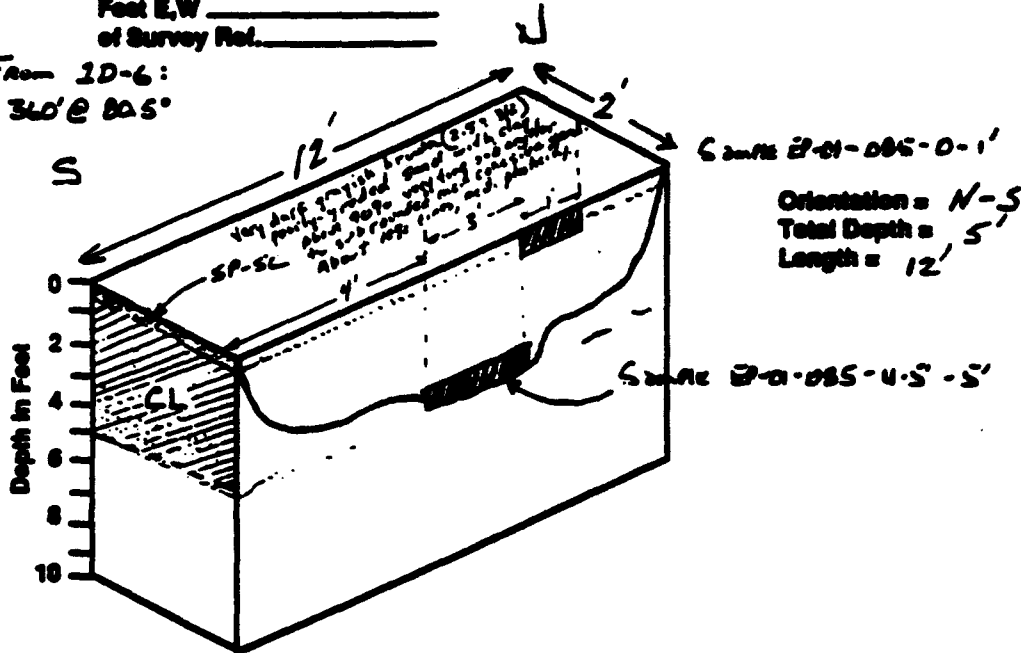
# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1d Piquett Run Pond  
 TEST PIT LOG: TP EP-01-085  
 DATE EXCAVATED: 6/27/92  
 TIME EXCAVATION BEGAN: 1225  
 WEATHER CONDITIONS: Clear 85°F Slight E. Breeze  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

From 1D-6:  
 360° @ 80.5°



Orientation = N-S  
 Total Depth = 5'  
 Length = 12'

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % s, moisture, plastic)	VOC METER READINGS
EP-01-085-0-1'		CL	very dark grayish brown (5.5 YR) moist silty clay with sand, about 75% fines, plastic, mod. stiff, about 35% v. fine to fine sub-angular, poorly-sorted sand. No gravel. STRENGTH reaction = 1/ML.	0.0 ppm
EP-01-085-4.5-5'		CL	very dark grayish brown (5.5 YR) moist silty clay with sand, about 75% fines, plastic, mod. stiff, about 35% v. fine to fine sub-angular, poorly-sorted sand. No gravel. STRENGTH reaction = 1/ML.	0.0 ppm

Comment: No debris encountered at this location.



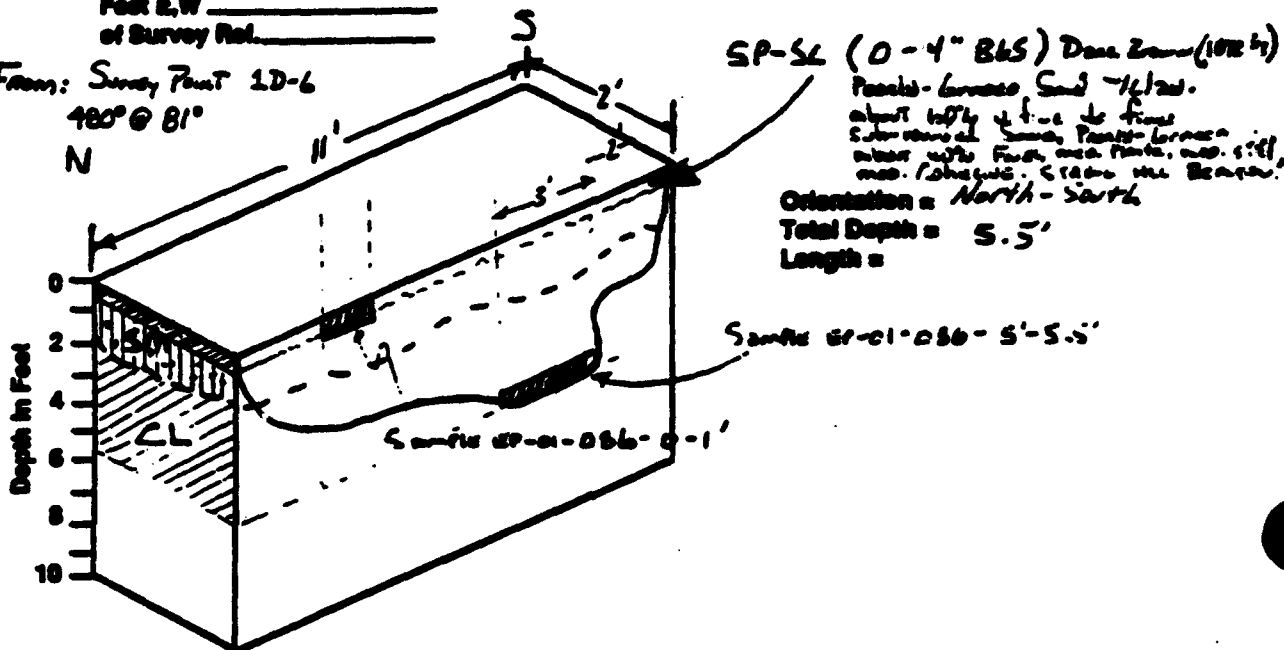
# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 2d Permeant Burn Pans  
 TEST PIT LOG: EP-01-086  
 DATE EXCAVATED: 6-27-92  
 TIME EXCAVATION BEGAN: 1:00  
 WEATHER CONDITIONS: Partly cloudy, 90°F, 5-15 mph variable wind,  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Foot N/S \_\_\_\_\_  
 Foot E/W \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

From: Survey Point 1D-6  
 480° @ 81'



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % ll, moisture, plant)	VOC METER READINGS
EP-01-086-0-1'		SM-CL	Dark Brown (10YR 3/2) clay silty sand; about 70% poorly-sorted u. fine to fine sub-rounded sand; about 30% fines with low plasticity to med. plasticity, med. stiff, med. cohesive. No gravel. Stone Random - 1 HCL.	D.O. ppm
EP-01-086-5'-5.5'		CL	Dark Yellowish Brown (10YR 4/2) med. to hard clay - 1/5 sand. about 80-90% FGS, w. the med. to hard plasticity; med. stiff, about 15% - 20% u. fine to fine sub-rounded poorly-sorted sand; no gravel. Stone Random - 1 HCL.	D.O. ppm

Comment: No debris in Trench; Low Permeant Coefficients were found in Sample Bore for 0-1' Sample.

JMM



TEAD-N PHASE I RFI

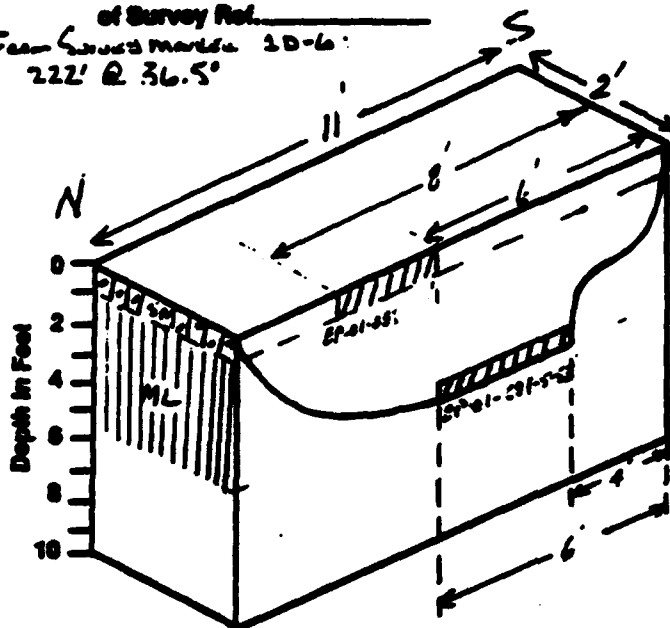
# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 2 d Pipeline Run EE-Mont/Inc. Kapeka  
 TEST PIT LOG: TP EP-01-087  
 DATE EXCAVATED: 6-25-92  
 TIME EXCAVATION BEGAN: 7:15  
 WEATHER CONDITIONS: Clear 70° F 15-15 mph SW winds  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

From Survey Marker 3D-6:  
 222' @ 36.5°



Orientation = North-South  
 Total Depth = 5.5'  
 Length = 11.5'

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plastic)	VOC METER READINGS
EP-01-087-0-1'		SM	very dark grayish brown (10YR 3/2) dry silty sand. About 60-70% very fine to fine subangular to subrounded poorly-graded loose sand. About 25-35% fines, soft, nonplastic. About 5% fine subrounded gravel.	0.0 ppm
EP-01-087-5-5.5'		ML	Dark brown to brown (10YR 4/3-3/2) sandy silt, moist. About 60% fines, low to medium plasticity, moderately stiff to stiff. About 90% very fine to fine poorly-graded subangular to subrounded sand. No gravel.	0.0 ppm

Comments:

No debris or burn zone encountered in pit.

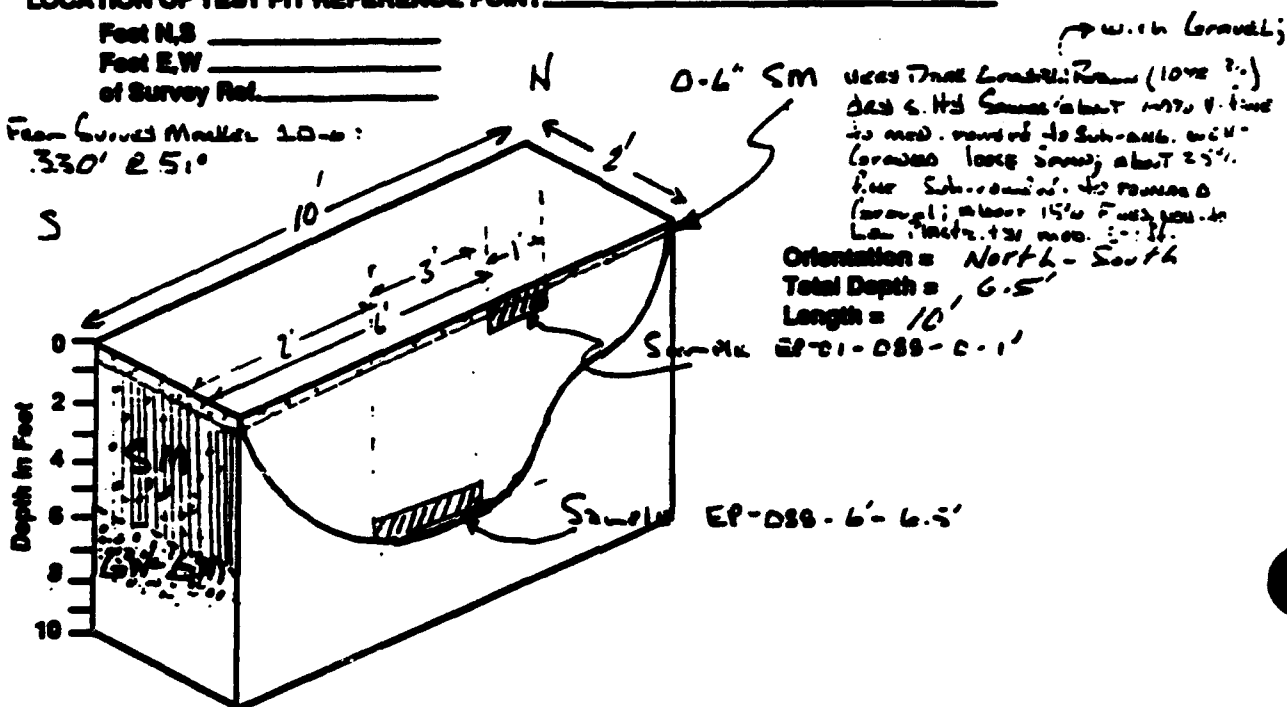
# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWRU NO.: 1d Pearlman Burn Pass 224/224  
 TEST PIT LOG: TP EP-C1-C68  
 DATE EXCAVATED: 6-28-92  
 TIME EXCAVATION BEGAN: 0955  
 WEATHER CONDITIONS: clear 85°F 5-16 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Foot N.S. \_\_\_\_\_  
 Foot E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

From Curves Marker 10-0:  
 330' 25.0'



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % s, moisture, plast.)	VOC METER READINGS
EP-C1-C68-0-1'		SM	Very dark grayish brown (10YR 4/2) dry silty sand. About 75% very fine to medium subangular to rounded well-graded fine sand. About 15% fines, soft, nonplastic. About 10% fine subangular to subangular gravel.	0.0 ppm
EP-C1-C68-6-6.5'		GW-GM	Dark yellowish brown (10YR 6/4) moist well-graded gravel with silt and sand. About 50% fine to coarse angular to rounded coarse gravel. About 40% very fine to coarse subangular to rounded well-graded sand. About 10% fines, soft, nonplastic.	0.0 ppm

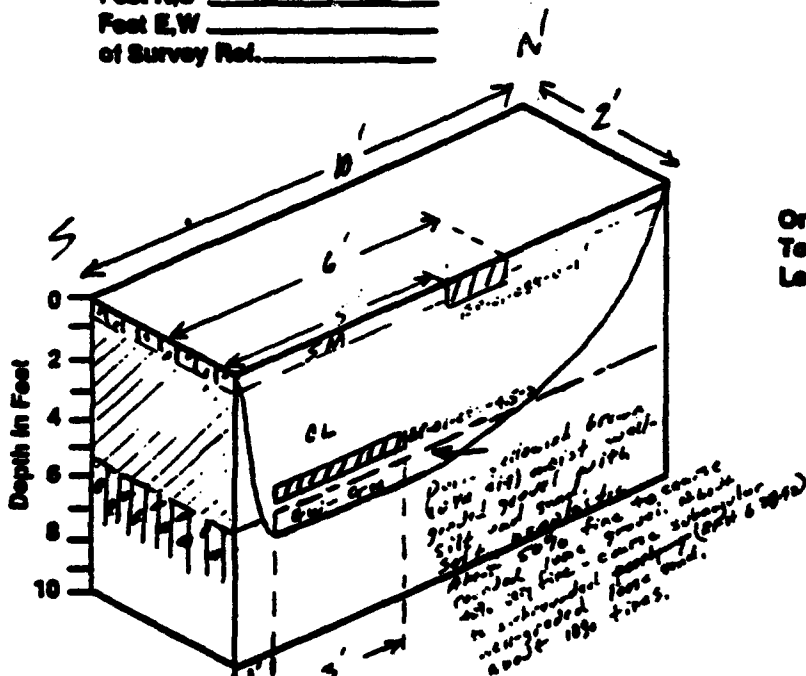
Comment:

no debris or sub-surface burn zone encountered.

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1d Fayetteville 3rd Phase 05/1/00  
 TEST PIT LOG: TP EP-01-CE9  
 DATE EXCAVATED: 6-22-92  
 TIME EXCAVATION BEGAN: 1250  
 WEATHER CONDITIONS: Partly cloudy, 90°F, 12-15 mph variable winds  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-CE9-	0-1'	SM	Very dark grayish brown (10YR 4/2) dry silty sand. About 60% very fine to medium subrounded to subangular moderately cohesive well-graded sand. About 30% fines, non-low plasticity, soft. About 10% fine subrounded to subangular gravel.	0.6 ppm
EP-01-CE9 -	45-5'	CL	Brown (10YR 4/3) moist lean clay with sand. About 75% fines moderately stiff, medium plasticity. About 25% very fine to fine subangular to subrounded poorly graded sand. No gravel.	0.6 ppm

Comment:

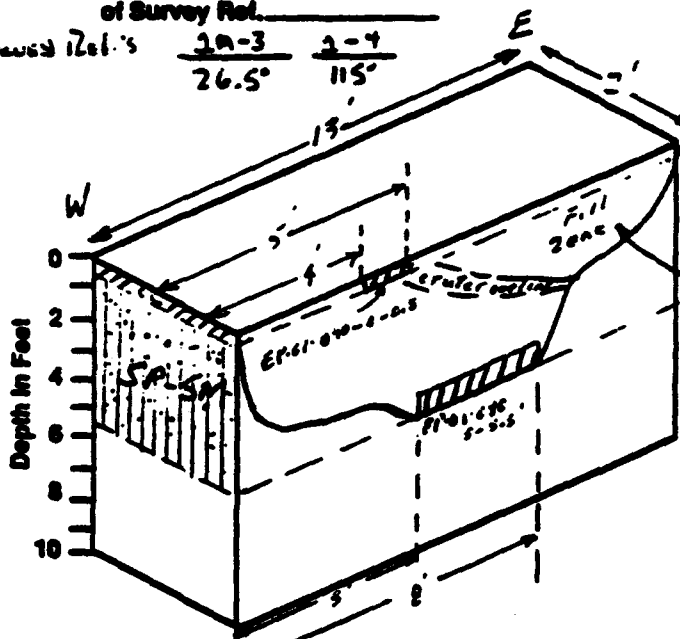
Minor metal fragments scattered throughout pit.

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1a Cluster Bank Area  
 TEST PIT LOG: TP EP-01-090  
 DATE EXCAVATED: 6-30-92  
 TIME EXCAVATION BEGAN: 1215  
 WEATHER CONDITIONS: Clear, 65°F, 5 mph NE winds  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Foot N.S. \_\_\_\_\_  
 Foot E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

Survey Ref. 2A-3 2-4  
26.5° 115°



Orientation = East - West  
North - South  
 Total Depth = 5.5'  
 Length = 13'

Light olive brown (2.5: s/s) dry sandy silt. About 70% fines, low plasticity, soft. About 30% very fine, poorly-sorted, subangular to subrounded sand. No gravel.

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOG METER READINGS
EP-01-090 - 0-0.5'		CL	Dark brown (10YR 3/3) dry sandy lean clay. About 60% fines, medium plasticity, stiff. About 30% fine to very fine poorly-sorted subangular to subrounded sand. About 10% fine subangular to rounded gravel.	C.C ppm
EP-01-090 - 5-5.5'		SP-SM	Light olive brown (2.5Y s/s) moist poorly-sorted sand with silt. About 70% very-fine gravel subrounded to subangular loose sand. About 10% fines, soft, nonplastic.	C.C ppm

Comment: No evidence of debris or burn zone below 0.5' ags.  
Minor metal fragments and fuse parts in top 0.5'.

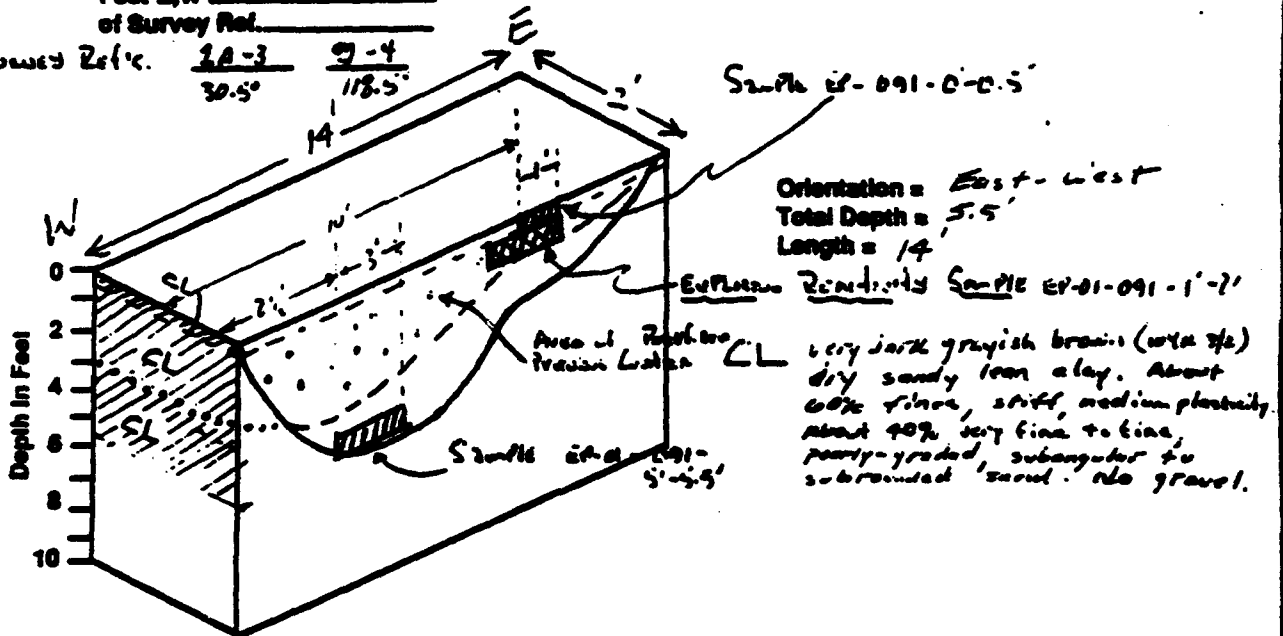


# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 19 Cluster Remt Area  
 TEST PIT LOG: TP EP-01-091  
 DATE EXCAVATED: 6-30-82  
 TIME EXCAVATION BEGAN: 1340  
 WEATHER CONDITIONS: Cloudy, 65°F, 16-17 mph, NE winds  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

Survey Ref. 2A-3 9-4  
30.5° 118.5°



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-091 - C - C.5'		CL	very dark grayish brown (w/ 1/2) dry lean clay with sand. About 75% fines, moderately stiff to stiff, medium plasticity. About 25% poorly-graded, very fine, subrounded to subangular sand. No gravel.	C.C ppm
EP-01-091 - S - 5.5'		CL	Light olive brown (w/ 2.5% s/s) moist lean clay with sand. About 60% fines, medium plasticity, moderately stiff. About 20% very-fine, poorly-graded, subangular to subrounded sand. No gravel.	C.C ppm

Comment: Minor Sandstone metal fish. in area of localized Plume Location.

**JMI**



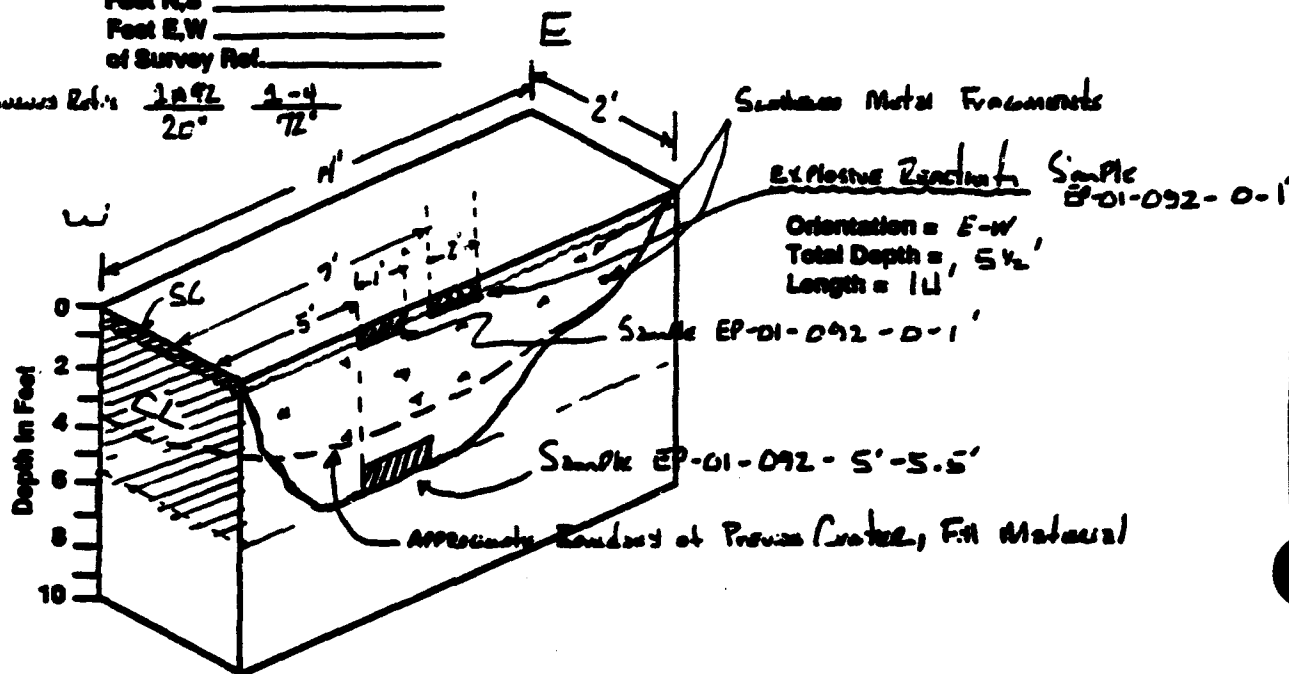
TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMJ NO.: 1a Charles Bank Area R.F./D.C.  
 TEST PIT LOG: TP EP-01-092  
 DATE EXCAVATED: 1 July 1992  
 TIME EXCAVATION BEGAN: 0830  
 WEATHER CONDITIONS: Cloudy 55°-60° F.  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

Survey Ref. 1-92 1-4  
20° 72'



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % s, moisture, plastic)	VOC METER READINGS
EP-01-092-D-1'		SC	Dark Brown (10YR 4/3) clay clayey sand; about 60% fine-grained, silty to fine sub-rounded to rounded med./large sand; about 40% fines with low to med. plasticity and soft to med. stiff < 5% fine sub-rounded gravel; steel Reaction -1mb.	D.O. Pen
EP-01-092-S'-S.5'		CL	Dark Brown (10YR 4/3) med. sand; low clay; about 60% fine-grained, silty to med. stiff; about 30% med.-large U. fine to med. sub-rounded to sub-angular sand; about 10% fine sub-rounded gravel. Steel Reaction -1mb.	D.O. Pen

Comment: Scattered Metal Fragments throughout Pit.

**JMM**



TEAD-N PHASE I RFI

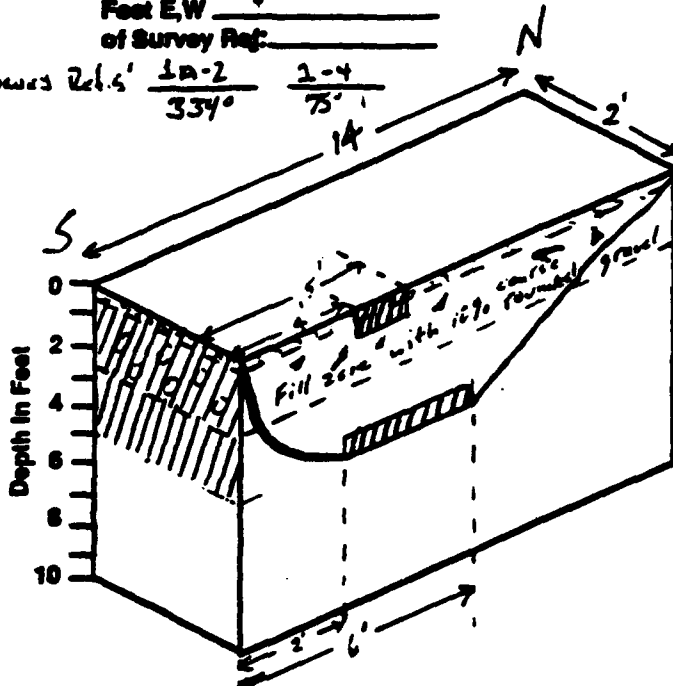


# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 14 Charles Beach Ave 2 Dick / R-4  
 TEST PIT LOG: TP EP-01-C93  
 DATE EXCAVATED: 1 July 1992  
 TIME EXCAVATION BEGAN: 0945  
 WEATHER CONDITIONS: Rain 55 F  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref: \_\_\_\_\_

Survey Ref. S'  $\frac{12-2}{334^\circ}$   $\frac{2-4}{75^\circ}$



Orientation = N-S  
 Total Depth = 5'  
 Length = 14'

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % s, moisture, plast.)	VOC METER READINGS
EP-01-C93-0-1'		CL	Very Dark Grayish Brown (10YR 2/2) clay Silted loam (CL); about 60% fines w/ low to medium plasticity; soft to mod. St. Pl; about 25-40% Fines. Grained s. fine to med sub-rounded to sub-angular Sand. No Gravel. Standard Reaction = 1/100.	0.0 ppm
EP-01-C93-4.5'-5'		CL	Light Olive Brown (2.5Y 5/3) moist Lean Clay - 1 Sand; about 70% fines w/ low to medium plasticity; mod. stiff; about 30% s. fine to med, p. med-grained sub-rounded Sand; no Gravel. Standard Reaction = 1/100.	0.0 ppm

Comment: Scattered metal fragments.

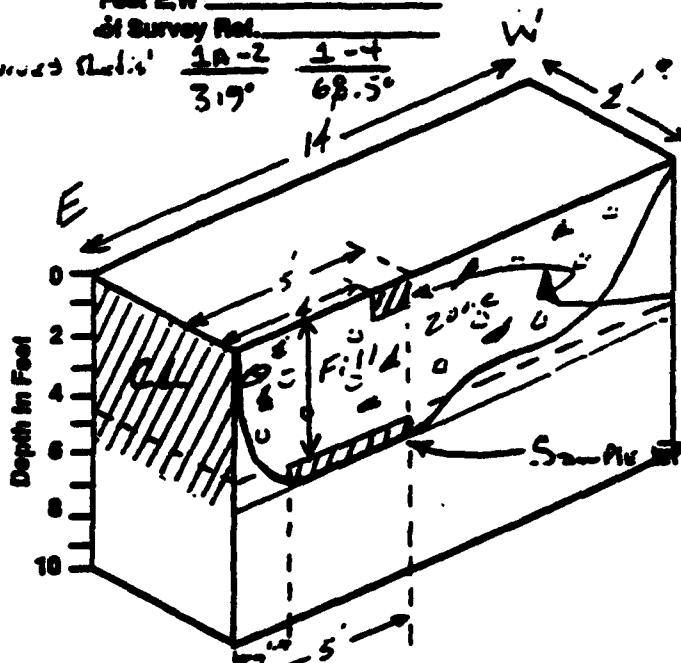
# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 10  
 TEST PIT LOG: TP EP-01-094  
 DATE EXCAVATED: 7-1-92  
 TIME EXCAVATION BEGAN: 12:15  
 WEATHER CONDITIONS: Rainy, 55°F, 5 mph light wind  
 LOCATION OF TEST PIT REFERENCE POINT:

Foot N.S. \_\_\_\_\_  
 Foot E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

Survey Station 1A-2 1-4  
319° 68.5°



Orientation = East-West  
 Total Depth = 5.5'  
 Length = 14'

Sample EP-01-094-0-1'

Sample EP-01-094-5'-5.5'

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plant)	VOC METER READINGS
EP-01-094-0-1'		CL	Drill Corrosion Record (2.51 1/2) and Sands from Class: about 55% - 60% fines w/med. Plasticity med. Still, about 40% - 45% u. fine to fine sub-spherical. Small Grained Sand; 1/4" fine channel formed. Some Zirconium 1/16".	0.0 ppm
EP-01-094-5'-5.5'		CL	Drill Record (10 1/2 3/4) moist. Lenses clay with some; about 75% - 75% fines w/med. to high Plasticity, med. Still; about 2% - 10% fine-grained sub-spherical u. fine to fine sand; NO Gravel. Some Zirconium 1/16".	0.0 ppm

Comment: Encountered Sand at 2' 36"; scattered Lenses (LH-70' do.) metal fragments.

JMM

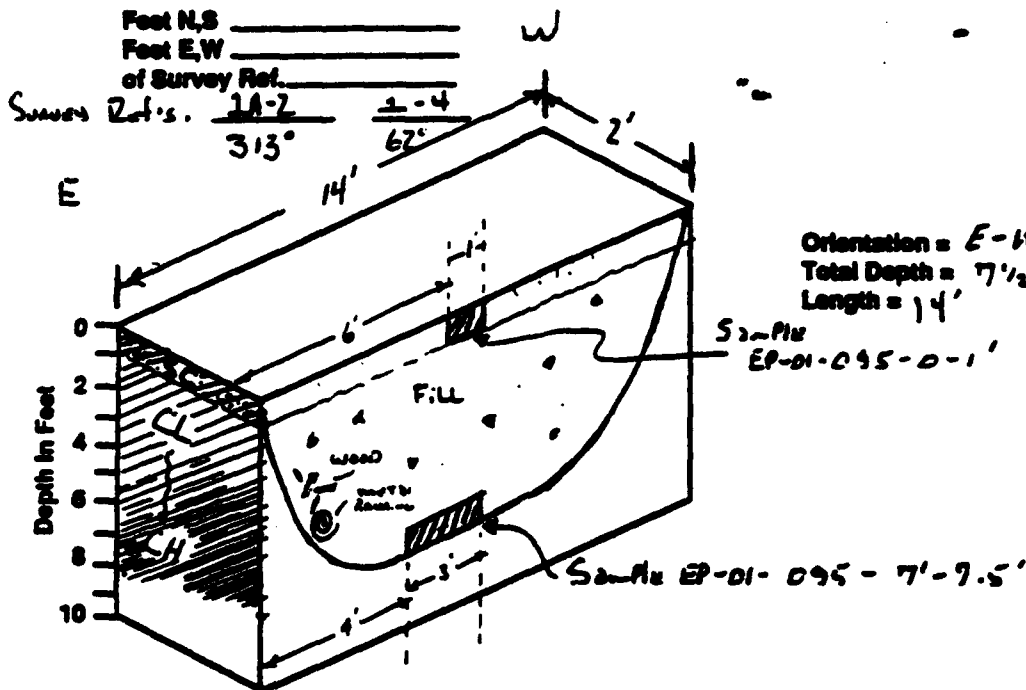


TEAD-N PHASE 1/1991

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1a Cluster Bomb Area DR/REH  
 TEST PIT LOG: TP EP-CI-C25  
 DATE EXCAVATED: 2 July 1992  
 TIME EXCAVATION BEGAN: 7:30  
 WEATHER CONDITIONS: Cloudy, LT. Rain, 55°F  
 LOCATION OF TEST PIT REFERENCE POINT:



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plastic)	VOC METER READINGS
EP-DI-C95-0-1'		SC	Very Dark Grayish Brown (2.5 Y 4/2) moist clayed sand; about 25% well-sorted s. fine to medium sub-rounded to sub-angular sand, with some coarse to med. cohesive; about 25% s. fine to med. plastic; med. stiff; about 5% fine sub-rounded to rounded gravel. STRENGTH Reaction 1/10.	0.0 ppm
EP-DI-C95-7'-7.5'		CH	Very Dark Grayish Brown (10YR 4/2) moist to wet fat clay with sand; about 85% fines - high plasticity; stiff; about 15% poorly-sorted s. fine to med. sub-rounded to sub-angular sand; no gravel. STRENGTH Reaction 1/10.	0.0 ppm

Comment: Encountered Unknown wood Fragment, metal fragments, metal banding. Some forensic material was noted in bottom - was included in Samples from 7'-7.5' R/S. This location may have been a Large Autoclave Center which was used for disposal of debris, and then landfilled.

JMM



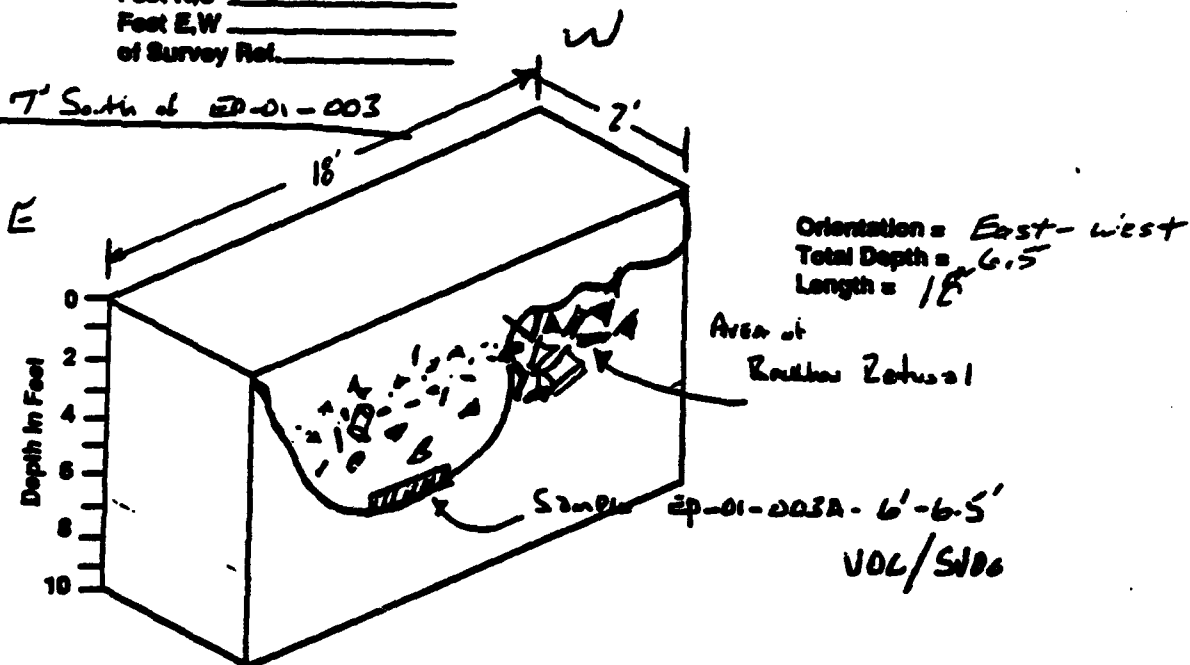
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Area Ref. Area  
 TEST PIT LOG: TP EP-01-003-A  
 DATE EXCAVATED: 7-2-92  
 TIME EXCAVATION BEGAN: 12:55  
 WEATHER CONDITIONS: Partly cloudy, 76°F, South West wind  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fl, moisture, plast.)	VOC METER READINGS
EP-01-003-A - 6-6.5			D.O.M.

Comment: Encountered copper shavings, ammo cans, a crushed drum, Band in material, rods, Packed Rins, Slab.

JME



TEAD-N PHASE I RFI

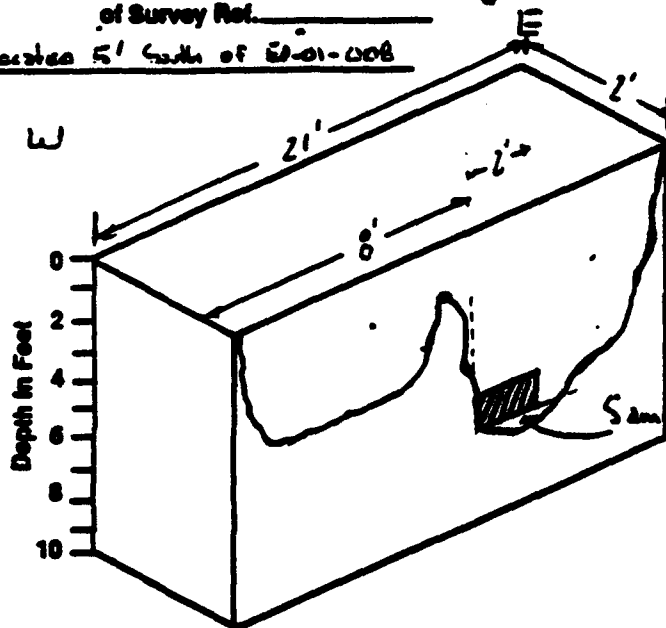
# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition Area  
 TEST PIT LOG: TP EP-01-008-A  
 DATE EXCAVATED: 7-2-92  
 TIME EXCAVATION BEGAN: 0820  
 WEATHER CONDITIONS: Clear 52° F 12-15 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

Located 5' South of EP-01-008



Orientation = East-West  
 Total Depth = 6.5  
 Length = 21'

SAMPLE NO.	SAMPLE LOCATION (IL)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % fl, moisture, plant)	VOC METER READINGS
EP-01-008-A	6'-6.5'			0.0 ppm

Comment: Reopened EP-01-008 to obtain VOC and Semi VOC samples. Encountered refusal zone in west end of trench comprised of large pieces of metal debris. Moved east 6-10', excavated to 6.5 ft AGS and obtained sample.



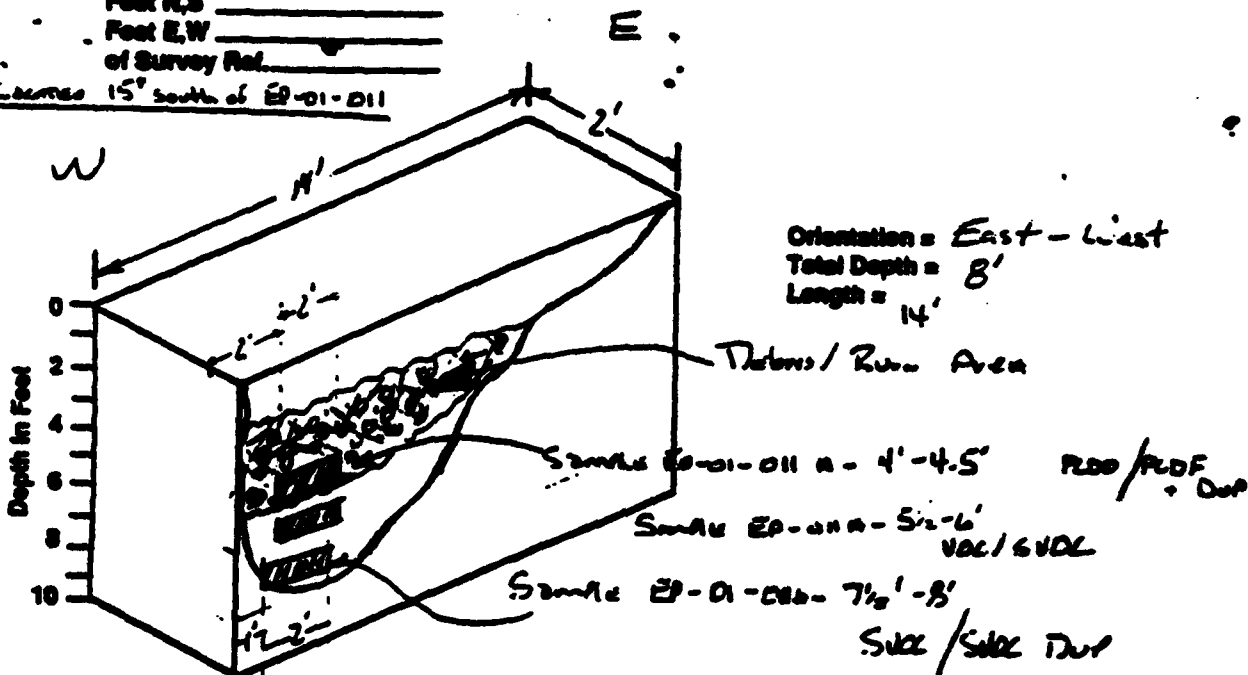
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1  
 TEST PIT LOG: TP EP-01-C11-A  
 DATE EXCAVATED: 2 July 1997  
 TIME EXCAVATION BEGAN: 1:00 PM  
 WEATHER CONDITIONS: Clear 55°F 10-15 mph SW wind  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_  
 Located 15' south of EP-01-D11



SAMPLE NO.	SAMPLE LOCATION (L)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % ll, moisture, plastic)	VOC METER READINGS
EP-01-D11-A	4'-4.5'			0.0 ppm
EP-01-D11-A	5'-6'			3.6 ppm
EP-01-D11-A	7'-8'			0.8 ppm

Comment: Encountered abundant debris & Run Residue from 2' - 5' BGS.

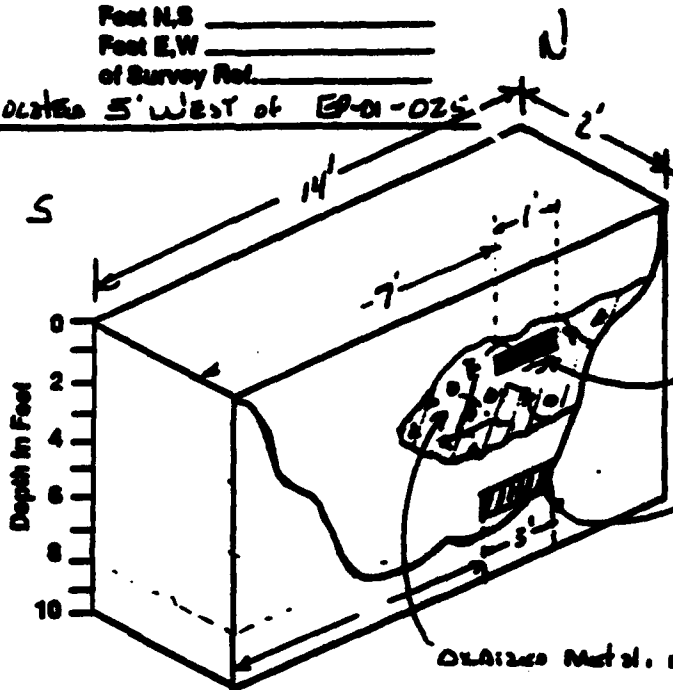
# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Denial Area DEL/RPH  
 TEST PIT LOG: TP EP-01-025A  
 DATE EXCAVATED: 2 July 1992  
 TIME EXCAVATION BEGAN: 11:55  
 WEATHER CONDITIONS: Clear 72°F Light Breeze  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

Location 5' West of EP-01-025



Orientation = N-S.  
 Total Depth = 8'  
 Length = 14'

EL. Pos. 2.2 m. L. EP-01-025A-3'-3 1/2'

Sample EP-01-025A-7 1/2' - 8'

Gravelly Material with wire

SAMPLE NO.	SAMPLE LOCATION (IL)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % fl, moisture, plant)	VOC METER READINGS
EP-01-025A-7 1/2' - 8'				D.D.P.M.

Comment: Excavated into south side of Power trench; abundant metal & burn debris.

PROJECT NO. 2042.0120

TEAD-N PHASE I RFI

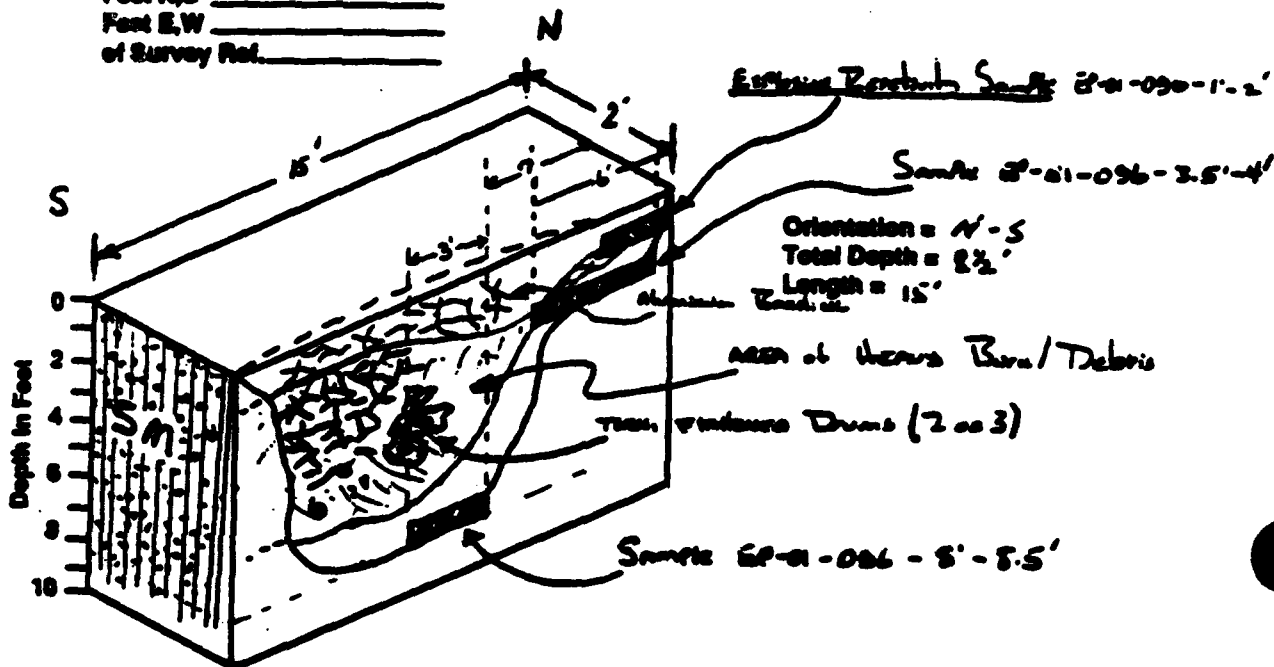


# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 16 Burn Pools DEC/BNH  
 TEST PIT LOG: TP EP-01-096  
 DATE EXCAVATED: 8-4-92  
 TIME EXCAVATION BEGAN: 1330  
 WEATHER CONDITIONS: P. Cloudy, Breezy, Sun at 10:00 75°F  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Foot N/S \_\_\_\_\_  
 Foot E/W \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gw, % ss, % s, moisture, plastic)	VOC METER READINGS
EP-01-096-3.5'-4'		GM	(10% 2,1) very dk. brown. slightly moist, loose silty sand; about 20% sand, v. fine to medium, sub-angular; about 20% fine to med. plastic, soft. small amount of shell.	0.0 ppm
EP-01-096	8'-8.5'	SM	(10% 2,1) dark yellowish brown, slightly moist, loose silty sand, 20% sand, 20-25% fine, no plasticity, soft. sand - fine to medium, sub-angular. strong reaction w/ HCl.	0.0 ppm

Comment: Very little to no "A" horizon development. Encountered steel & aluminum Banding Material. 2 or 3 crushed Jaw Drums; 2 electrical boxes; a 70-ton Projectile; a trans former assembly; 55-gal drum retainer board; plastic tubing; metal iron; and more stuff; also unknown wood & charcoal.

JBH

w/ earth

TEAD-N PHASE I RFI

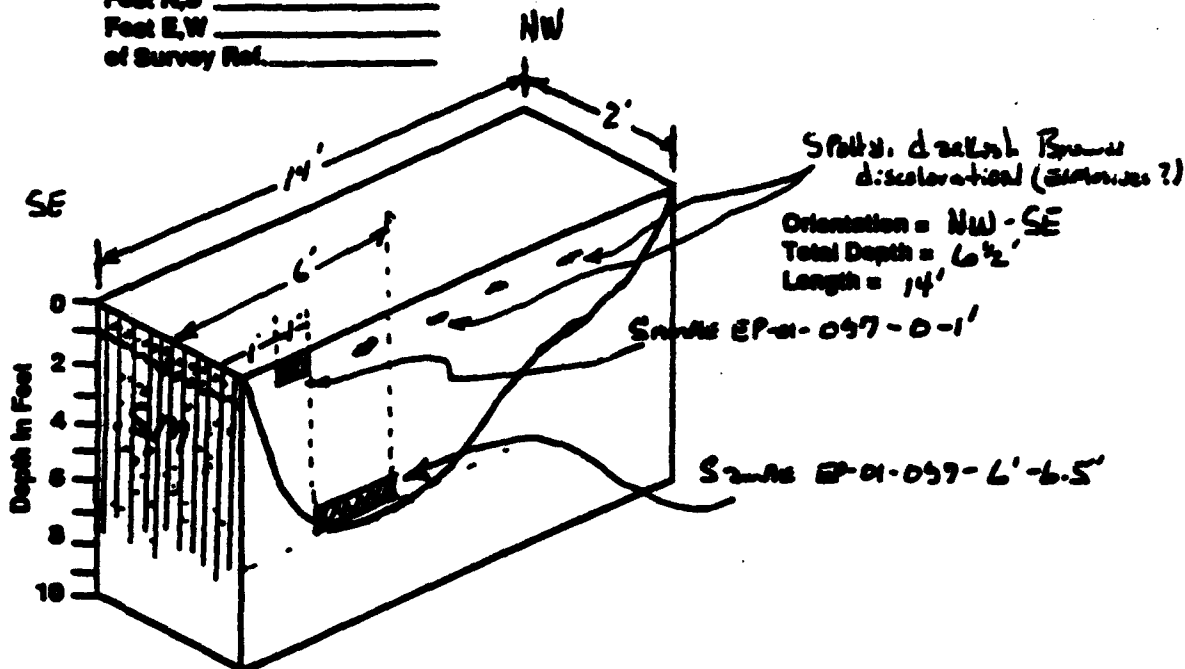


# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1b Bism. Pad D66/ 13KH  
 TEST PIT LOG: TP EP-01-047  
 DATE EXCAVATED: 8-5-92  
 TIME EXCAVATION BEGAN: \_\_\_\_\_  
 WEATHER CONDITIONS: Clear, Breezy from South (10-15 mph), 85 F.  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS	VOC METER READINGS
			(color, % gy, % ss, % s, moisture, plast.)	
EP-01-047	0-2'	SM	10YR 4/2, dark grayish brown, -30% gravel, 15-20% sand, surface, 50% sand. Gravel - +ve, sub-round. Sand - very fine to coarse, sub-angular. No to low plasticity, soft. Dry. Silty sand.	0.0
EP-01-047	6-6.5'	SM	10YR 4/4, dark yellowish brown, silty sand. 0% gravel, 15-20% s, 80% sand. No plasticity, soft. Sand - 15 fine to medium, sub-angular.	0.0

## Comment:

No debris or burn residue noted, though soil does appear disturbed over entire depth of trench. Some slight darkish-brown discoloration (silts?) noted at 6" BGS, at 5' from SE end, and spotty to NW.



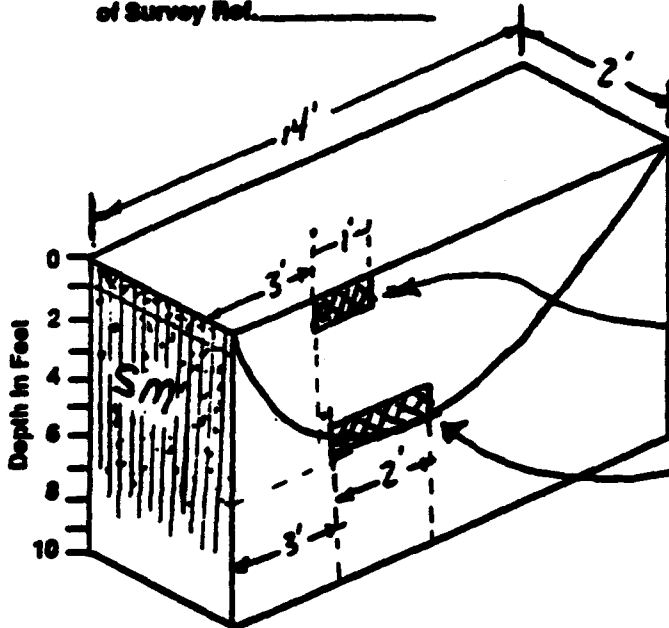
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1b Burn Pad DCX/BLH  
 TEST PIT LOG: TP EP-01-098  
 DATE EXCAVATED: 8-5-92  
 TIME EXCAVATION BEGAN: 0935  
 WEATHER CONDITIONS: Clear, Breeze from South (10 mph), 85°F.  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Orientation = NW-SE  
 Total Depth = 6'  
 Length = 14'

Sample EP-01-098-0-2'

Sample EP-01-098-5.5'-6'

SAMPLE NO.	SAMPLE LOCATION (L)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-098	0-2'	SM	10YR 4/3 dark brown, <5-10% gravel, 55-60% sand, 35-40% fines, dry, low to no plasticity, soft. Silty sand. Gravel - fine to coarse, sub-round. Sand - fine to medium, sub-angular to sub-round. Weak HCl reaction.	0.0
EP-01-098	5.5'-6'	SM	10YR 5/6 yellowish brown, 0% gravel, 0-15-20% fines, 80+% sand, dry, silty sand. No plasticity, soft. Sand is fine, angular to sub-angular. Strong HCl reaction.	

Comment:

No debris or burn Residue Noted Here.

JMM



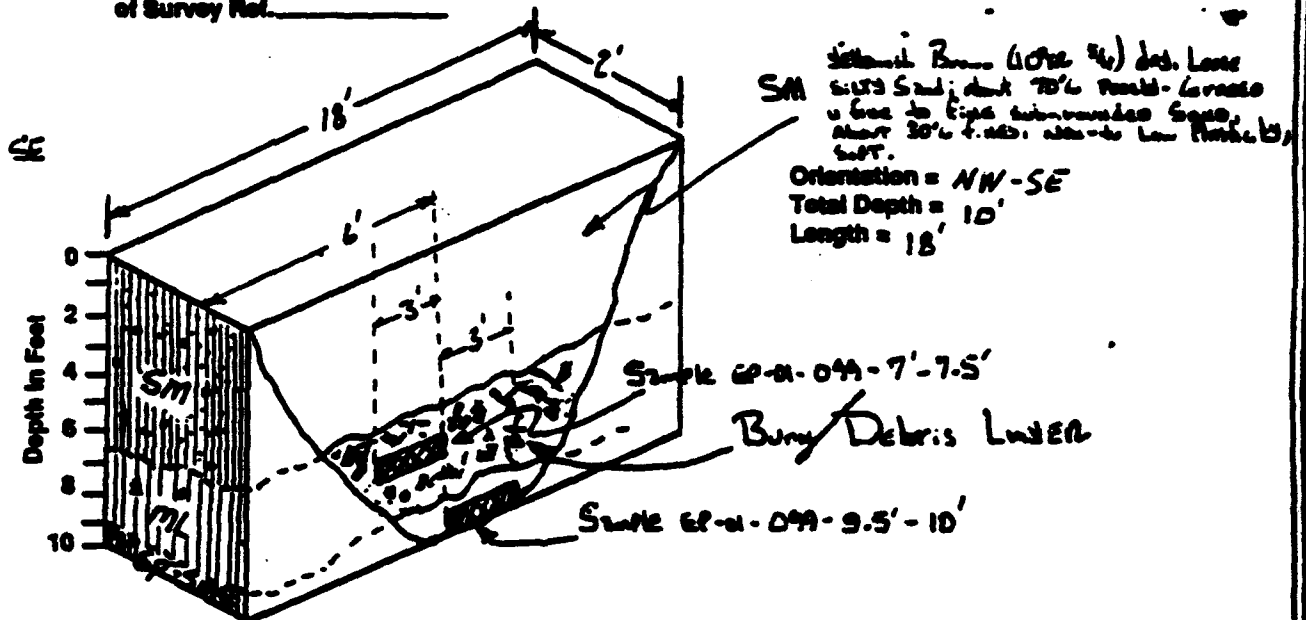
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 b Burn Pad DKK/RKH  
 TEST PIT LOG: TP EP-01-099  
 DATE EXCAVATED: 8-5-72  
 TIME EXCAVATION BEGAN: 10:30  
 WEATHER CONDITIONS: Clear, Breezy, Fine South (10-20 mph) 85%.  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_ NW  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION	USCS SOIL TYPE	SOIL DESCRIPTIONS	VOC METER READINGS
	(R.)		(color, % gr, % ss, % s, moisture, plast.)	
EP-01-099	7-7.5'	ML	10YR2/1, black gravel 5%, sand 95% fines 50%. No plasticity to low plasticity, Soft, Dry. Sand is very fine to very coarse, sub-angular. Gravel is fine, sub-angular. Sandy silt.	.00
EP-01-099	9.5-10'	SP-SM	10YR5/4, yellowish brown, Gravel 0%, Sand 95%, fines 10-15%. No plasticity, soft. Dry. Finely graded sand w/ silt. Sand is very fine to fine, medium.	.00
Comment:				

Comment:

Encountered about 20 105 mm small canisters, a fragmentation bomb, charcoal, ash, wiring, ammo cans & lig. metal fragments.

PROJECT NO. 2942.0120



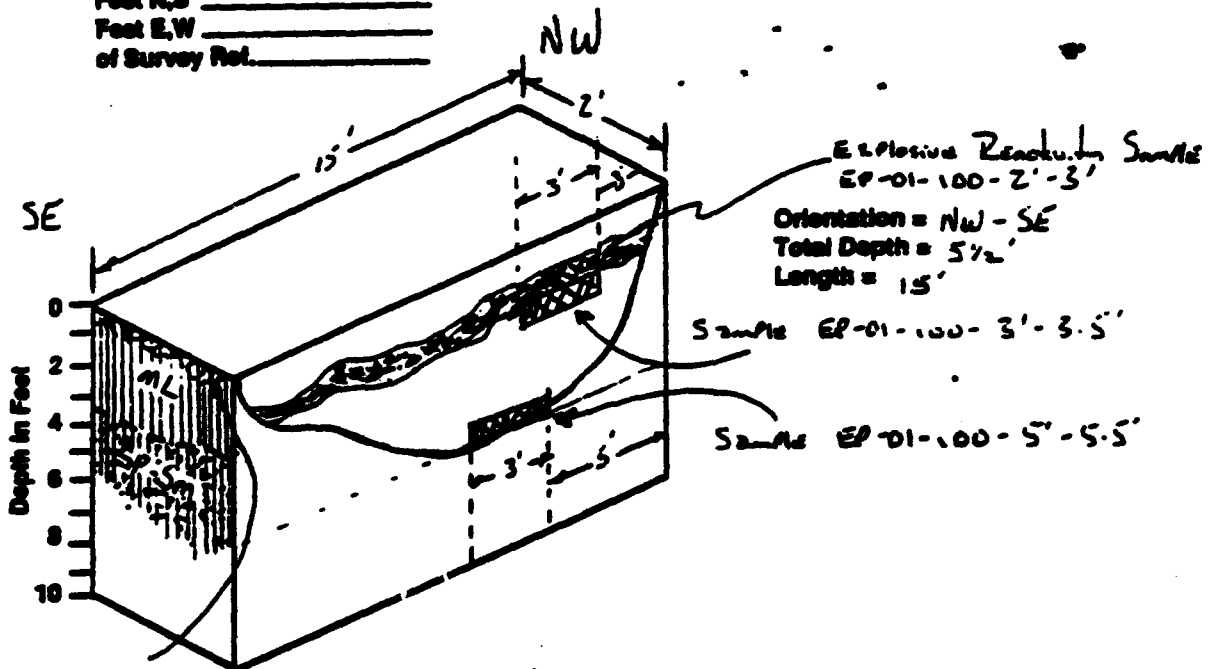
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 16 Burn Pass DW/IRH  
 TEST PIT LOG: TP EP-01-100  
 DATE EXCAVATED: 1.8.85  
 TIME EXCAVATION BEGAN: 8-5-92  
 WEATHER CONDITIONS: P. Cloudy, T. STARS, 90°F.  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Minimum 12" Development - Ballistic Plates

SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-100	3-3.5'	ML	10YR 4/2, very dark grayish brown 45% Gravel, 30% sand, 65% fine. Dry, low plasticity, soft - sandy silty. Sand - very fine to fine, sub-angular to sub-round.	0.0

EP-01-100 5'-5.5' Sp-sm 10YR 5/4, yellowish brown, 0% Gravel 0.0  
 sand 20-40% fines 10-20% No  
 plasticity, soft, slightly moist to dry,  
 poorly graded sand w/ silt.  
 Sand very fine, angular to sub-angular.

Comment:

Enclosed 1'-2' Thick Burn / Deton Layer w/ metal Frag. Ballis Lenses,  
 ASB.

JEH

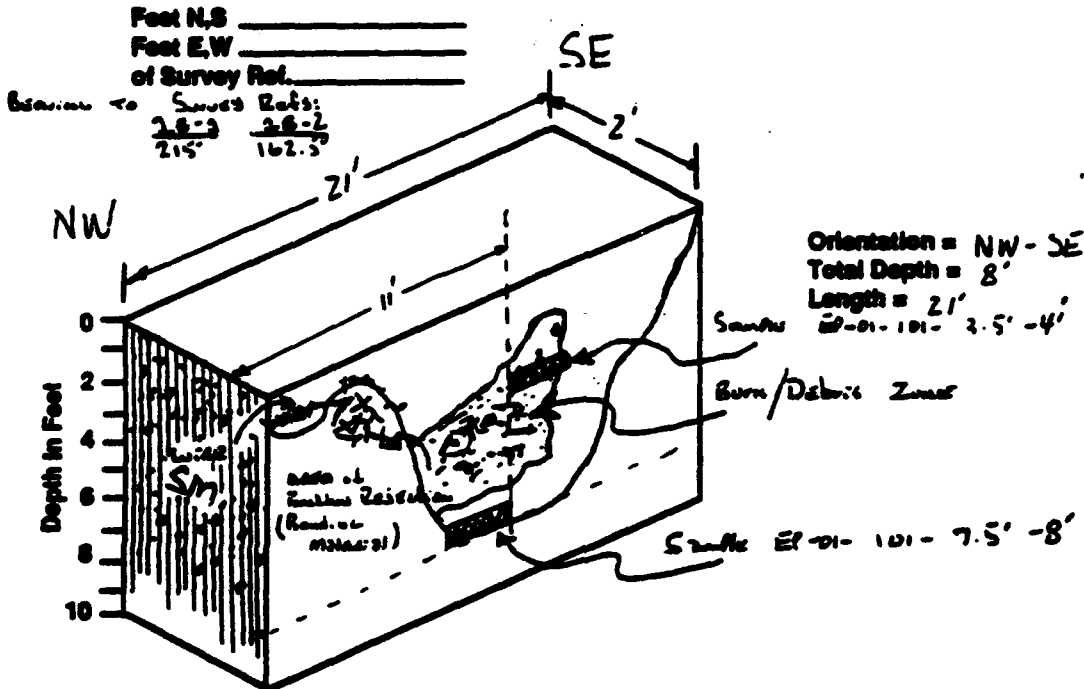
w/ earth

TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWIM NO.: 001 - 16 Burn Pans DLA/ BKH  
 TEST PIT LOG: TP EP-01-101  
 DATE EXCAVATED: 8-6-92  
 TIME EXCAVATION BEGAN: 9:00  
 WEATHER CONDITIONS: clear / wind from south gust to 20 K  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast)	VOC METER READINGS
EP-01-101	2.5-4'	SM	10YR 7/1, very dark gray, 45% gravel, 65% - 70% sand, 25-30% fines, dry. Silty Sand. Sand - very fine to fine, sub-round to sub-angular. No plasticity, soft.	0.0
EP-01-101	7.5-8'	SM	10YR 6/4, light yellowish brown, 0% gravel, 60% sand, 40% fines. Low plasticity. Low to moderate stiffness. Silty sand - dry. Fine sand - angular to sub-angular.	0.0

Comment: Encountered area of landfill material in NW end of Trenching Line about 100' from material. charcoal, Ashes, burning wires in 5' soil. old 200 bucket, 8"-12" bolts, small C-clamps, and small - nuts CASINGS.

JMM

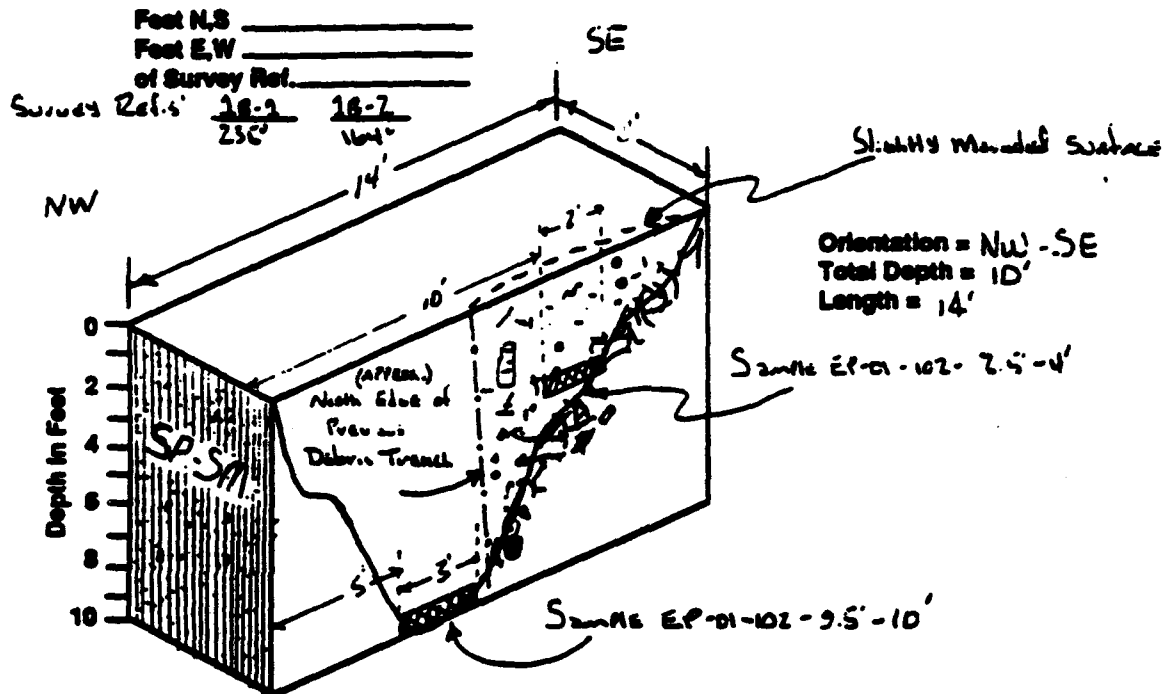


TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C DE/ BKH  
 TEST PIT LOG: TP EP-01-102  
 DATE EXCAVATED: 5-12-97  
 TIME EXCAVATION BEGAN: 1030  
 WEATHER CONDITIONS: Clear, 65°F, Breeze from South 10-15 mph.  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-102	3.5'-4'	SP-SM	10% 2/4, dark grayish brown, < 5% gravel, 60% sand, 40% fines. Low Plasticity, Low strength. Sand is very fine to fine, sub-angular. Dry, partly-grained Soil -/s/LT.	0.0
EP-01-102	9.5'-10'	SP-SM	10% 4 1/2 dark grayish brown < 5% Gravel, 60% sand, 35-40% fines. Low Plasticity & strength. Dry. Sand - very fine to fine, sub-angular. partly-grained Soil -/s/LT.	0.0

## Comment:

Encountered bedding striations + wide, some cross. 2 Corbin SS-bol drums and batteries (L.P.). No evidence of Ash or Charcoal. This excavation cut into the North Edge of the Previous debris trench.



by: with  
& 2 and

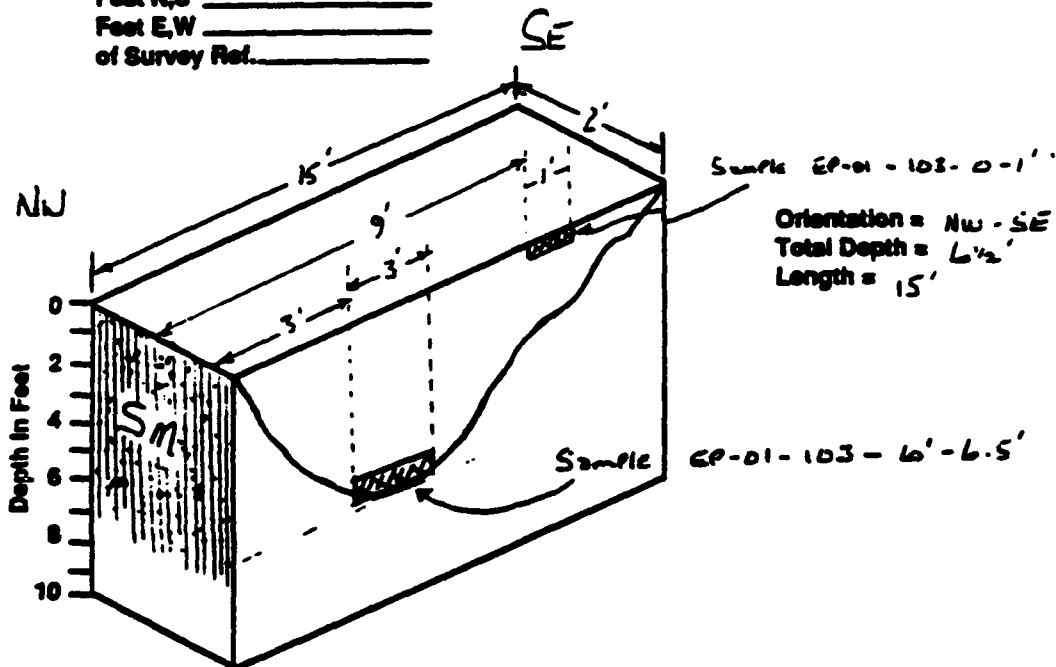
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 C DLK / BKH  
 TEST PIT LOG: TP EP-01-103  
 DATE EXCAVATED: 8-6-92  
 TIME EXCAVATION BEGAN: 12:00  
 WEATHER CONDITIONS: cloudy, Gusty wind from S with 20K  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-103	0-1'	SM	10YR 4/2, dark grayish brown, 0% gravel, 55% sand, 45% fines, Dry, low plasticity, low stiffness. Sand is very fine to fine, sub-round to sub-angular, silty sand.	0.0
EP-01-103	6-6.5'	SM	10YR 4/4, light yellowish brown, dry, 0% gravel, 70% sand, 30% fine. Low plasticity, low stiffness. Silty sand. Sand is fine grained, sub-angular.	0.0

Comment: No debris or burn evidence not: LEO. Trench excavated in Low-Low Ponding. or "Lagoon" area.

PROJECT NO. 2042.0120

JMM



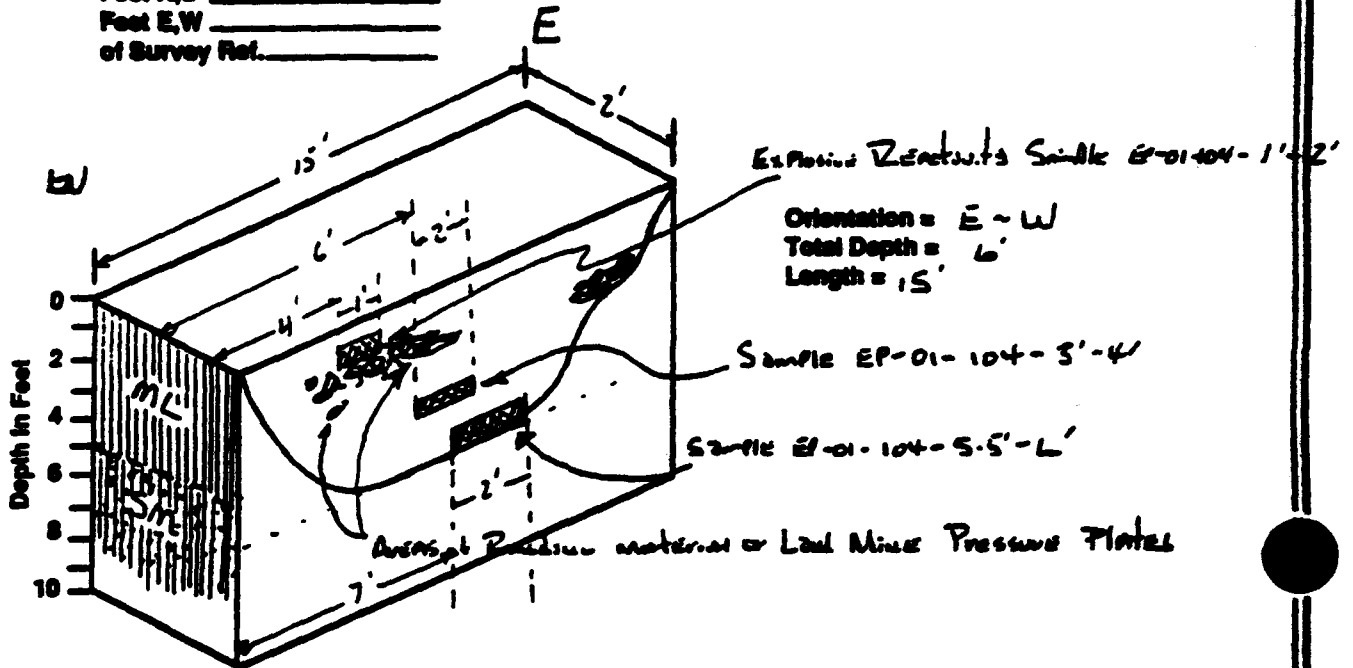
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: LC OK/Bkit  
 TEST PIT LOG: TP EP-01-104  
 DATE EXCAVATED: 9-6-92  
 TIME EXCAVATION BEGAN: 13250  
 WEATHER CONDITIONS: cloudy, south wind  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % s, moisture, plast.)	VOC METER READINGS
EP-01-104	3'-4'	ML	10YR 4/6, brown to dark brown, 0% gravel, 40% sand, 60% fines, low plasticity, low stiffness, dry. Sandy silt.	0.0
EP-01-104	5.5'-6'	SM	10YR 6/4, light yellowish brown, 0% gravel, 60-70% sand, 30-40% fines, 40 to low plasticity, 40 to low stiffness, dry. Silty sand. Sand is very fine sub-angular.	0.0

Comment: Encountered banding strata (steel) & abundant Lead mine Pressure Plates. Magnetic traverse across this location shows 5000 + g.



# TEST PIT EXCAVATION LOG

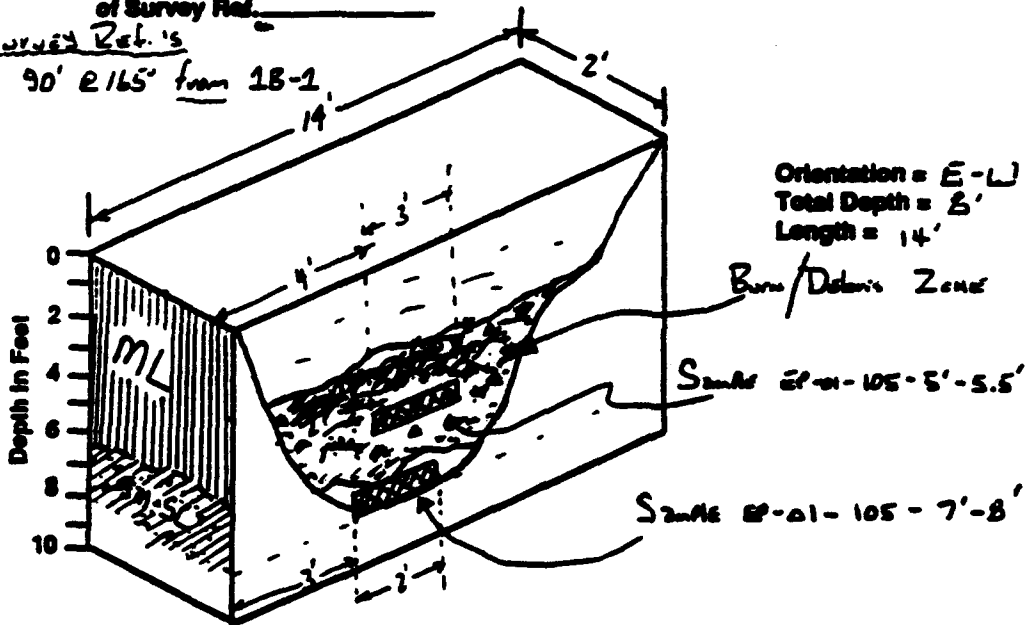
## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C DCL/BKH  
 TEST PIT LOG: TP EP-01-105  
 DATE EXCAVATED: 8-7-92  
 TIME EXCAVATION BEGAN: 0620  
 WEATHER CONDITIONS: 2 clouds, 80°F, S. wind @ 20 mph  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

Survey Ref. is

90' E 165' from 1B-1



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % s, moisture, plast.)	VOC METER READINGS
EP-01-005	5-5.5 ft	ML	10YR 2/3, very dark brown, 10% gravel, 30% sand, 50% fines. Low plasticity, low stiffness, dry. Generally medium sandy silt. Sand - very fine to fine, sub-angular.	0.0
EP-01-006 EP-01-007	7-8'	SM-SC	10YR 10/4, yellowish brown, 25% gravel, 10% sand, 65% fines. Low plasticity, low stiffness, moderate dry strength. Dry to slightly moist. Silty-clayey sand. Very fine, sub-round to sub-angular sand.	0.0

Comment: Magnetic Turnover at this Location shows 5000 ± G. Debris encountered includes 155 mm. smooth canisters, band saw blades & wires, nails, charcoal, ash.

JMM



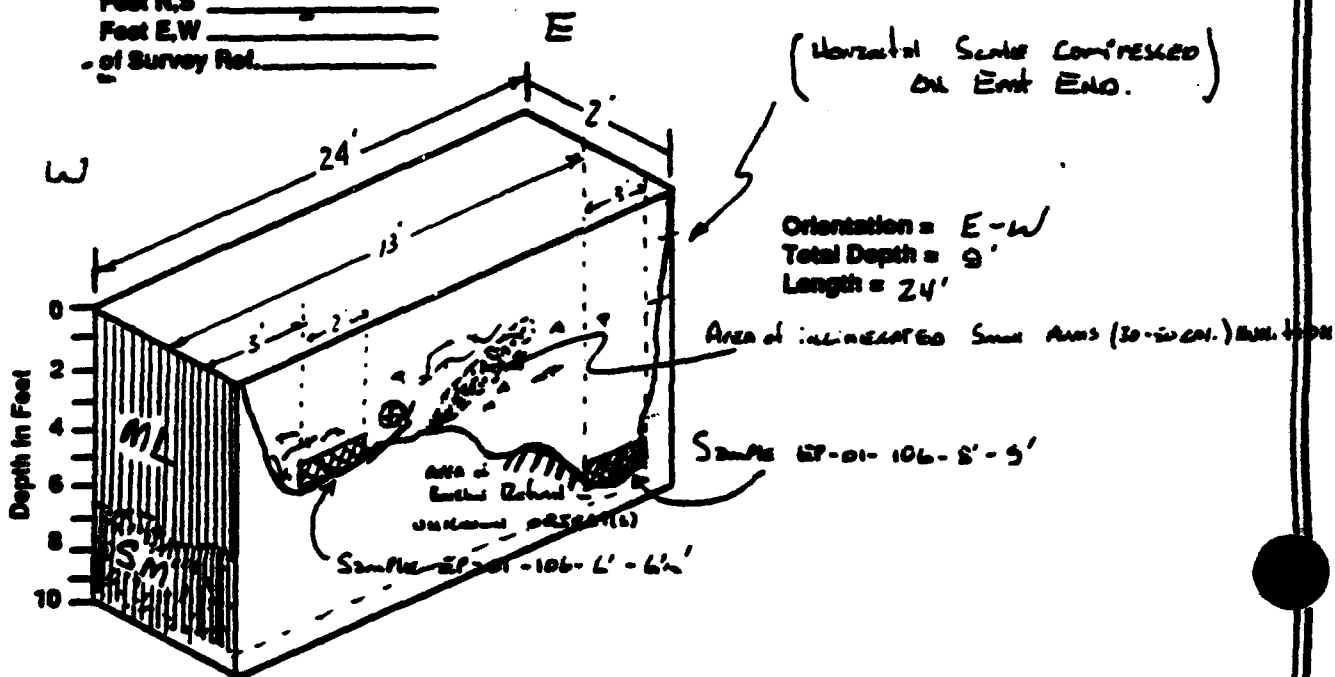
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C RM/DLL  
 TEST PIT LOG: TP 2-CI-106  
 DATE EXCAVATED: 8-7-92  
 TIME EXCAVATION BEGAN: 0955  
 WEATHER CONDITIONS: ? (clouds) So. Wind 15-20 MPH. 55°F.  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plastic)	VOC METER READINGS
EP-01-106	6'-5"	ML	10YR 5/3, dark sandy grey to slightly moist, 15-20% gravel, 55% sand, 45% fines. Non-to Low PLASTICITY, Low STRENGTH. SANDY SILT w/ GRAVEL. SAND - VERY FINE TO MEDIUM, SUB-ANGULAR. GRAVEL - FINE TO MEDIUM, SUB-ANGULAR.	0.0
EP-01-106	8'-9"	SM	10YR 5/4, yellowish brown, dry - slightly moist, 5-10% gravel, 60% sand, 40% fines. Non-to Low PLASTICITY, Low STRENGTH. SAND - VERY FINE, SUB-ANGULAR. SILTY SAND.	0.0

**Comment:**

MAGNETIC Traversal at this Location shows 500+ ft. Below found includes 1 1/2"-2" steel pipes, steel Rebar, abundant small arms (20-50 cm) incinerated munitions (in Lugs), a 3-5 Gal. Crude oil container or Paint can; 1000 Pounds, Ammo can Lid a small arm ammo can. URB contractor states this was probably a small arm incineration pit.

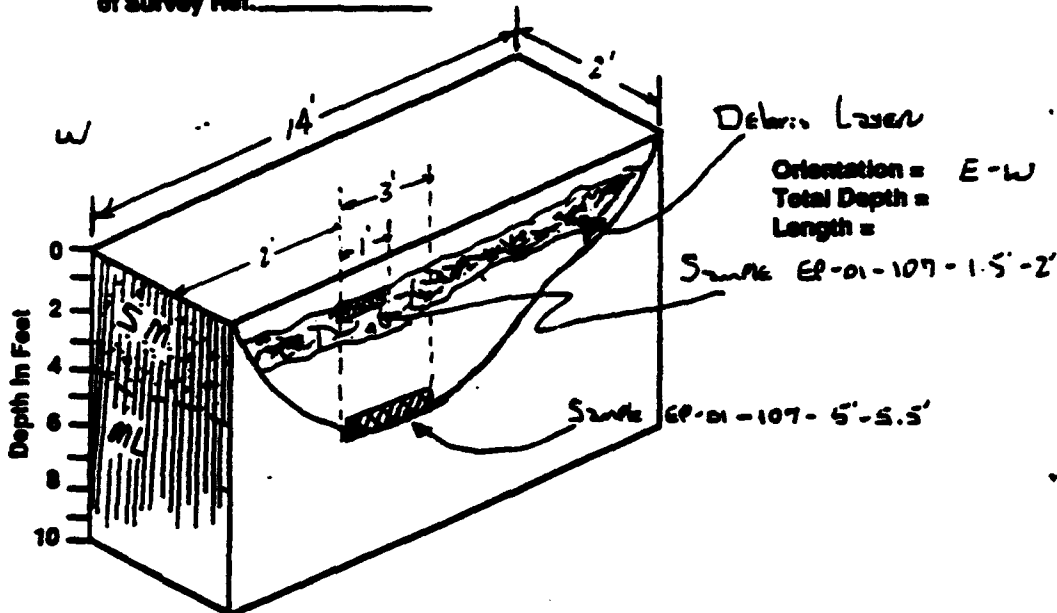


# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C Det./Bldg  
 TEST PIT LOG: TP EP-01-107  
 DATE EXCAVATED: 8-7-92  
 TIME EXCAVATION BEGAN: 1230 hrs.  
 WEATHER CONDITIONS: P Cloudy, 90°F., 7-52hrs P.M.  
 LOCATION OF TEST PIT REFERENCE POINT:

Foot N.S. \_\_\_\_\_  
 Foot E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (RL)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-107	1-1.5'	SM	10YR 2/2, very dark brown, 16-15% gravel, 50% sand, 35% fines. Low plasticity, low stiffness. Dry. Silty sand w/ coarse sand - very fine to medium, sub-angular.	0.0
EP-01-107	5-5.5'	ML	10YR 5/4, yellowish brown, 0% gravel, 35-40% sand, 60% fines. Low plasticity, low stiffness. Sand - very fine, sub-angular to sub-round. Sandy silt, dry.	0.0

## Comment:

Magnate Traverser have a 200+ ft. Encountered about 1'-2' thick debris layer containing building materials, w. as handless steel structures, a red. 200 metal frame, and 2 75mm Projectiles.

JME

w/earth



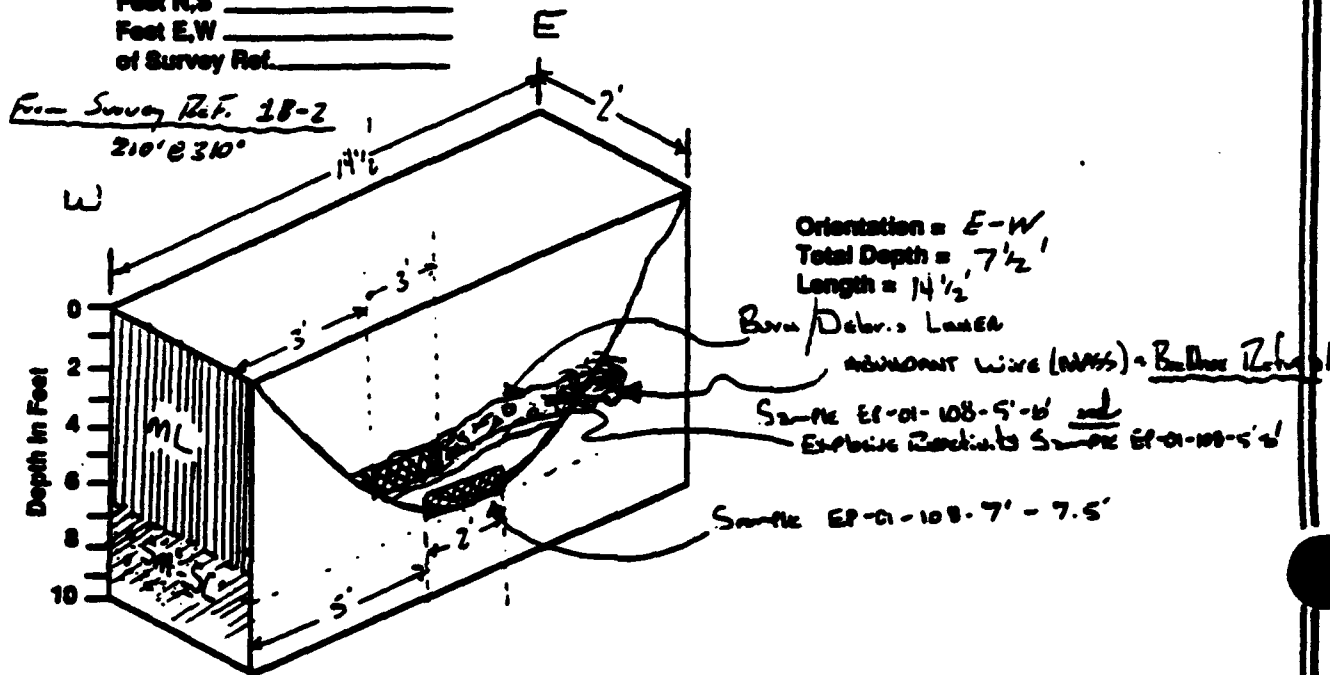
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C Dick/BKH  
 TEST PIT LOG: TP EP-01-108  
 DATE EXCAVATED: 8-7-92  
 TIME EXCAVATION BEGAN: 13:10  
 WEATHER CONDITIONS: Clouding up looks like rain, South gusty wind  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-108	5'-6'	ML	10YR 2/1, 25% gravel, 45% sand, 25-40% fines. Contains alot of ash! No to Low plasticity, Low strength. Sandy silt, dry to slightly moist. Sand - Fine, sub-angular.	0.0
EP-01-108	7'-7.5'	SM-SC	10YR 5/4, yellowish brown, dry. 0% gravel, 70-80% sand, 20-30% fines. Low to no plasticity, low to moderate stiffness, low to moderate dry strength. Silty - chunky sand. Sand is very fine & sub-angular.	0.0

Comment:

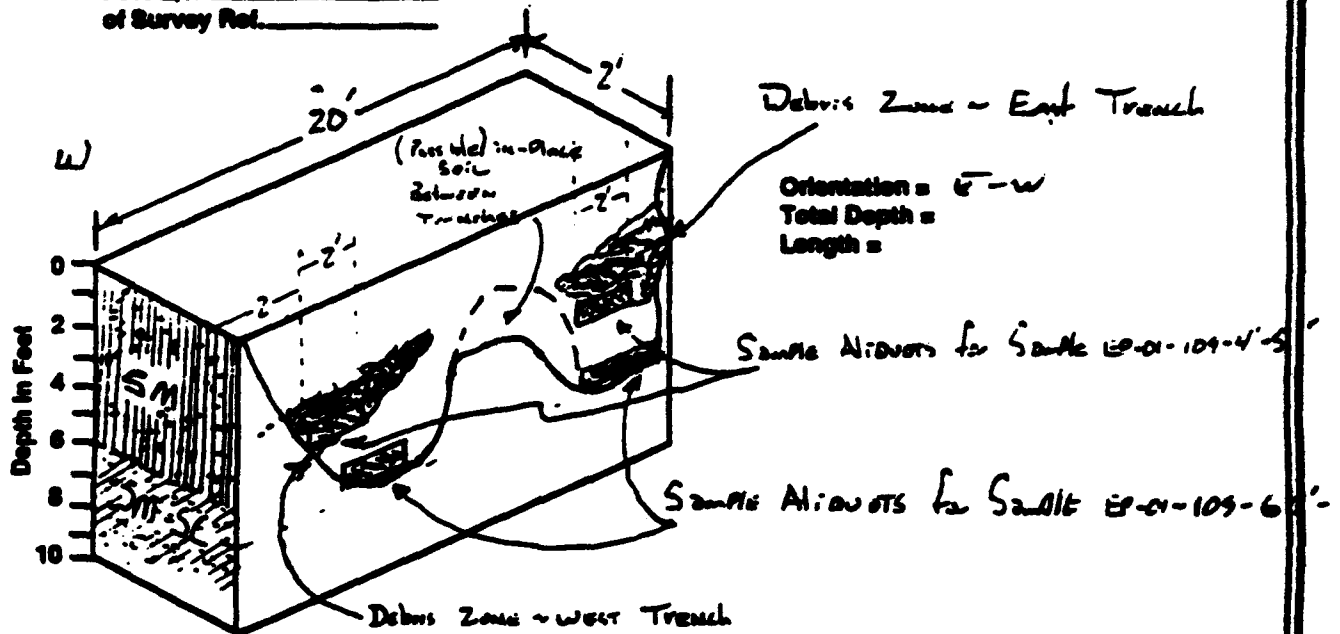
Magnetic Traverses Show 'Shore' Max. Trench encountered buried debris layer at 5'-6' BGS. Containing abundant wire, banding, metal frag. Charcoal, Ash, ammo containers lids, 1/2" steel tubing. Buried hit vertical zone of mass of wire or frag at East End of trench.

TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: LC DEK/BKH  
 TEST PIT LOG: TP EP-01-109  
 DATE EXCAVATED: 8-8-92  
 TIME EXCAVATION BEGAN: 8:15  
 WEATHER CONDITIONS: Scattered clouds, strong gusty wind from south to SW  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % s, moisture, plast.)	VOC METER READINGS
EP-01-109	4-5'	SM	10YR 4/2, dark grayish brown, Gravel 5-10%, sand 70-75%, Fines 15-20%, dry. Low to no plasticity, Low strength, Silty sand. Sand is very fine to medium, sub-angular; Gravel - fine, sub-angular. Contains ash.	0.0
EP-01-109	6.5-7'	SM-SC	2.5Y 4/4, light yellowish brown, 0% gravel, 60% sand, 40% fines, low plasticity, low to moderate strength, moderate dry strength, Silty-clayey sand, dry. Sand - very fine, sub-angular.	0.0

Comment:

Contents in two Previous trenches are similar: Steel Brackets, wires, among containers, lids, floor Parts (E. Trench), Paint Can (W. Trench).

PROJECT NO. 2542.0129

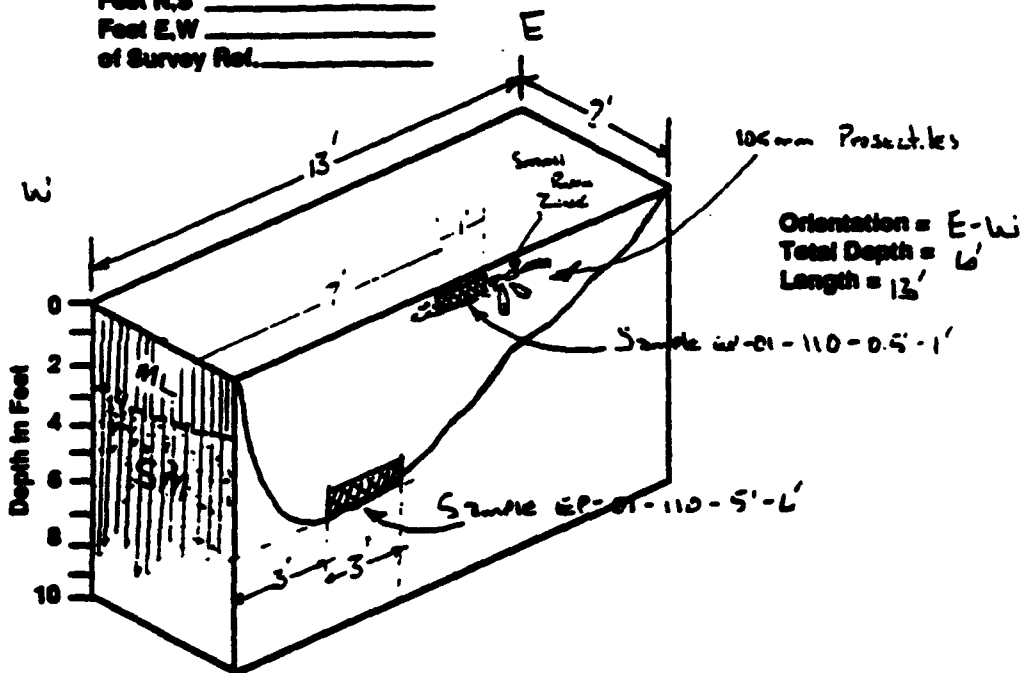


TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWIM NO.: 1C DCK/BKH  
 TEST PIT LOG: TP EP-01-110  
 DATE EXCAVATED: 8-8-78  
 TIME EXCAVATION BEGAN: 1445  
 WEATHER CONDITIONS: South wind, Partly cloudy, hot  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-110	5-1'	ML	10YR 4/2, dark grayish brown, dry, 65% gravel, 90% sand, 15-20% fines. No plasticity, low stiffness. Silty sand. Sand - very fine to medium, sub-angular to angular.	0.0
EP-01-110	5-6'	SM	10YR 4/4, light yellowish brown, dry. 0% gravel, 80% sand, 20% fines. No to Low plasticity, no to low stiffness. SILTY SAND. Sand - very fine, sub-angular to sub-round.	0.0

Comment:

Geophysical data indicates water 1000+ ft. Excavation only shows water low zone at Sample EP-01-110-5-1', and 3-4 100mm Prosediles.

JME

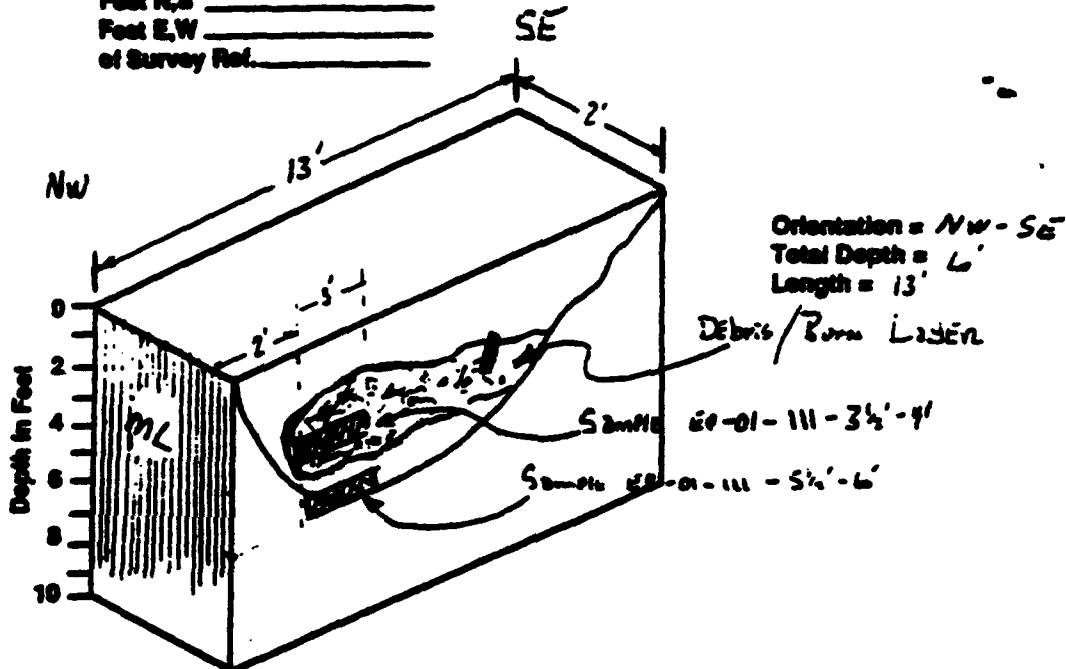
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C TRK / RKN  
 TEST PIT LOG: TP EP-01-111  
 DATE EXCAVATED: 8-7-92  
 TIME EXCAVATION BEGAN: 12:30  
 WEATHER CONDITIONS: Clear, 20 mph S.W. wind, 46°F.  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-111	3.5'-4'	ML	10YR 5/2, very dark grayish brown, dry 6% gravel, sand = 30-35%, fines = 65-70%. Low plastic to medium plasticity, low stiffness. Silt w/ sand. Sand - very fine to medium, sub-angular.	0.0.
EP-01-111	5.5'-6'	ML	10YR 6/4, light yellowish brown, 0% gravel, 30-35% sand, 65-70% fines. Low to medium plasticity, low to medium stiffness. dry sandy silt. Sand - very fine, sub-angular.	0.0.

Comment:

Loose stones (how 780 diam) = "SL Low 40mm". Encountered 3-5" rock + debris, charcoal. Ashes unknown wood, = 2" P.P.E.

PROJECT NO. 2042.0120

JME



TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

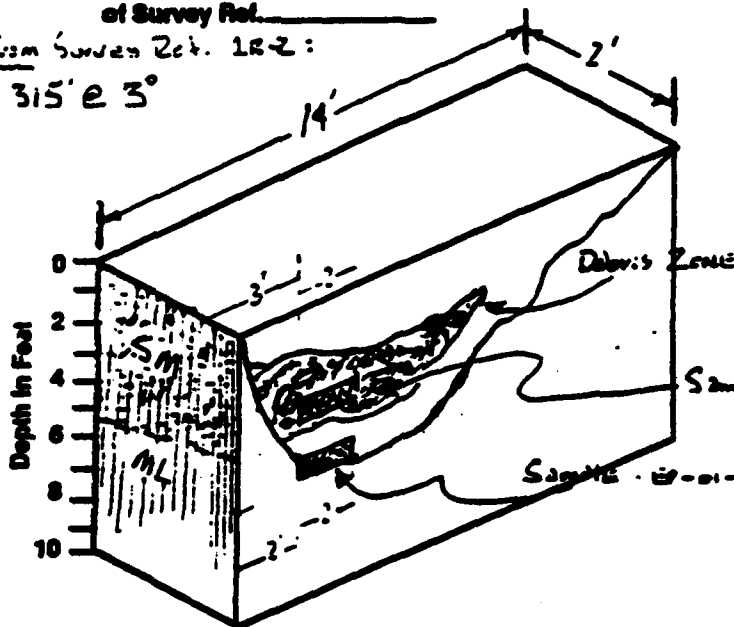
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C Dck/BK 4  
 TEST PIT LOG: TP EP-01-112  
 DATE EXCAVATED: 8-9-92  
 TIME EXCAVATION BEGAN: 9:50  
 WEATHER CONDITIONS: clear, south breeze (light), hot  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

From Survey Ref. 182:

315° ± 3°



Orientation = E-W  
 Total Depth = 10'  
 Length = 14'

SAMPLE NO.	SAMPLE LOCATION (ft)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gy, % ss, % f, moisture, plast)	VOC METER READINGS
EP-01-112	3.5-4'	SM	Dark yellowish brown (10% 1/2) Dns. non- to low plasticity; low stiffness. Gravel 10-15% and 65-70%, fines 25-30%. Silty sand w/ gravel. Sand is very fine to fine, sub-angular.	D.D. ppm
EP-01-112	5.5-6'	ML	10YR 6/4, light yellowish brown, dry. low to moderate plasticity, low to moderate stiffness. Gravel 0%, sand 30%, fines 70%. Sandy silt. Sand is very fine, sub-round to sub-angular.	0.0 ppm

Comment:

Geophysical Tomography Work shows "straw man" ± 5'±. Debris & casing from includes abundant bentonite. Rpt. strapping, bench sh. forms & clearance 2m 65, from sleeve for 60" bench. (2) 3" annular Protection, 2 covered 65'-6"±. Drums, closure Plugs for bents. Metal fence; only minor as noted.



TEAD-N PHASE I RFI

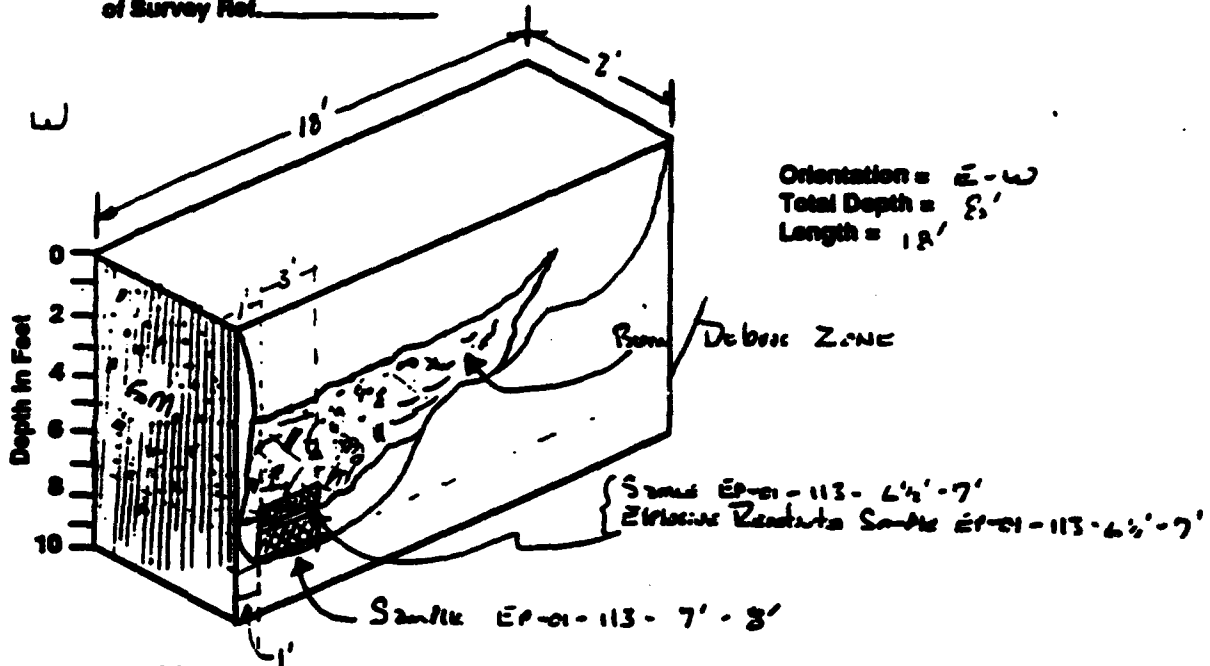


# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C TXK/BKH  
 TEST PIT LOG: TP EP-01-113  
 DATE EXCAVATED: 8-9-92  
 TIME EXCAVATION BEGAN: 12:45  
 WEATHER CONDITIONS: partly cloudy, wet  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-113	6 1/2' - 7'	SM	75% 3/4, dark brown, dry, 210% gravel, 6-70% sand, 20-25% fines. Silty Sand - Fine, angular to sub-angular.	0.0
EP-01-113	8' - 9'	SM	100% 3/4, light yellowish brown, slightly moist, low plasticity, low stiffness, Gravel=0%, Sand=80%, Fines about 20%. Sand - very fine, sub-angular to angular.	0.0

**Comment:**

Geophysical Grade at Location is "SC+max case + 6" Debris Zone Location Around Containment, Nails, Steel Piles, Bolts, 1" steel mesh, a piece of Charcoal Can, Proseutives, wire screen, channel.

**END**



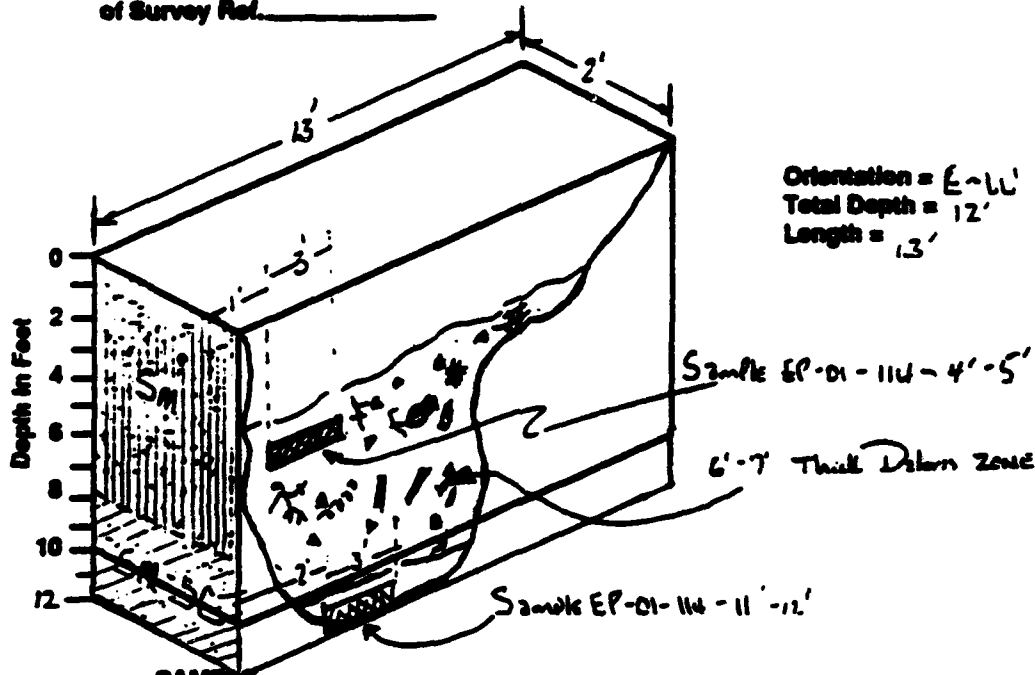
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C DCE/BK 14  
 TEST PIT LOG: TP EP-01-114  
 DATE EXCAVATED: 8.9.92  
 TIME EXCAVATION BEGAN: 1335  
 WEATHER CONDITIONS: partially cloudy, hot  
 LOCATION OF TEST PIT REFERENCE POINT:

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



Orientation = E-LL'  
 Total Depth = 12'  
 Length = 13'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-114	4-5'	SM	10YR 3/6, dark yellowish brown, dry. gravel to 100, sand 65-70%, fines about 20%-25%. Low plasticity, low stiffness. Silty sand w/ glass and metal fragments. Sand is very fine to fine grained, sub-angular.	0.0
EP-01-114	11-5'-12'	SM-SC	10YR 6/6, brownish yellow, slightly moist, gravel 0%, sand ~ 75-80%, fines ~ 25%. Silty sand Low to med. plasticity and stiffness. Sand is very fine, sub-angular to angular.	0.0

Comment:

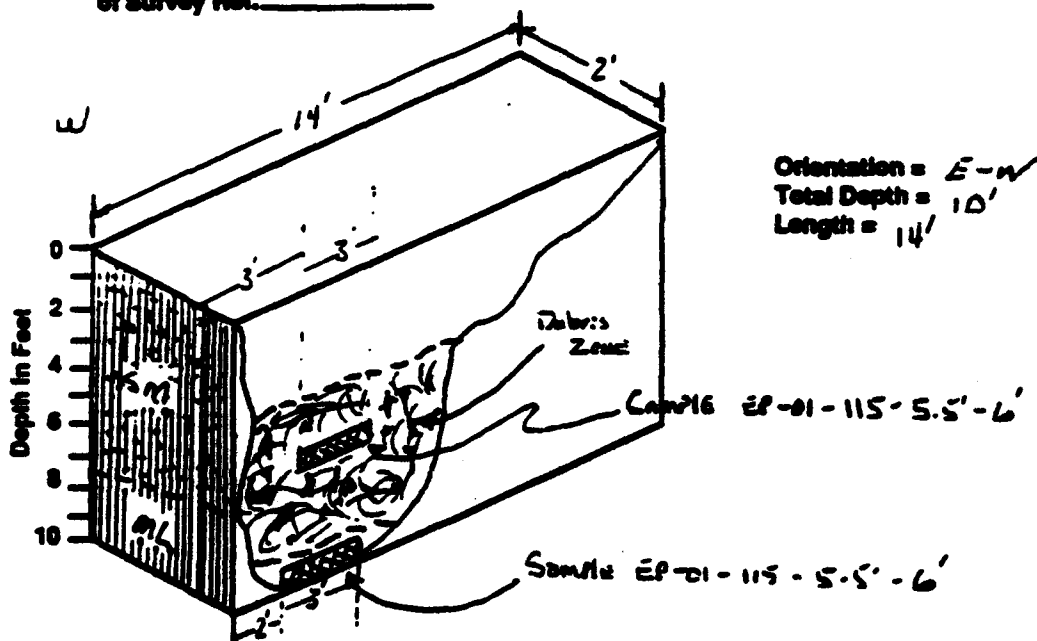
Geophysical data here reads 'SC + M26'. Debris zone contains 1/2" wire supports, bamboo rods, seven 5" rebar, various ash, a few 20" x 10" x 10" rocks, some crushed L.O.S., steel rods, 60 mm mortar, steel reinforcement. Abundant hematite - red soil. med. & moderate

TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C 241/3KH  
 TEST PIT LOG: TP EP-01-115  
 DATE EXCAVATED: 10 August 1992  
 TIME EXCAVATION BEGAN: 0840  
 WEATHER CONDITIONS: Clear, 17.0 m/s, 85°F  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % s, % f, moisture, plastic)	VOC METER READINGS
EP-01-115	5.5'-6'	SM	10YR 9/4, dark yellowish brown, dry, low plasticity and stiffness, 0% gravel, 60% sand, 40% fines. Silty sand - contains alot of small metal shavings and fragments. Sand is very fine to fine, sub-angular.	0.0
EP-01-115	9.5'-10'	ML	10YR 4/3, pale brown, dry, low plasticity, low to medium stiffness, gravel 0%, sand 40%, fines 60%. Silty sand is fine, sub-round.	0.0

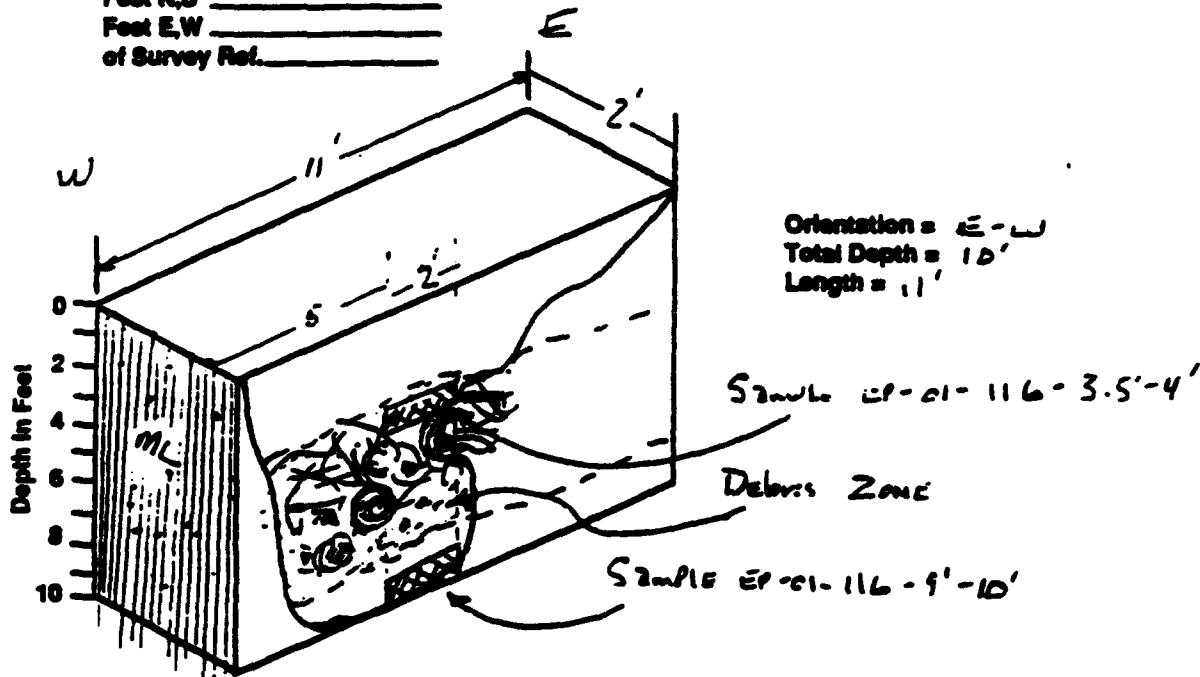
### Comment:

Geophis: 1) Stiller shows 100% + SL. Debris zone contains abundant steel band: 1/2, 20mm Annealed Coils 50 Cal Annealed Coils, remnants of 55-cal. 2mm (S), cut-up 40mm projectiles, small annealed, mother metal, 1mm - 2mm Plastic 3/16s Aluminum Vacuum-Pack Seal Material dated January 1979, broken Color bottle dated 12/79, worn metal drill bit H1165, a Plastic sheet on Trap, Denon 0.064 inch iron, a W.P.M. Hand Grenade. TEAD-N PHASE I RFI Dates reveal trench to be less than 13 yrs. old.

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C REK 1 72K  
 TEST PIT LOG: TP EP-01-116  
 DATE EXCAVATED: 8.10.92  
 TIME EXCAVATION BEGAN: 10:24  
 WEATHER CONDITIONS: P. cloudy, hot, slight north breeze  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-116	3.5-4'	ML	10YR 4/1, very dark gray, dry, 0% gravel, 40-55% sand, 40-65% fines. Low plasticity, low stiffness. Sandy silt. Sand is very fine to fine, sub-angular.	0.0
EP-01-116	9.5-10'	ML	10YR 4/3, pale brown, dry to slightly moist, 0% gravel, 40% sand, 60% fines. Sub-angular Sandy silt. Low plasticity, low stiffness. Very fine to fine sand, sub-angular.	

### Comment:

Geophysical stake at this location is "SC 1 M26". Debris zone here contains 3 sacks of unused, partially melted steel Random material, used Steel Reinforcing, metal caps, wire handles, metal containers, burned wood.

JME

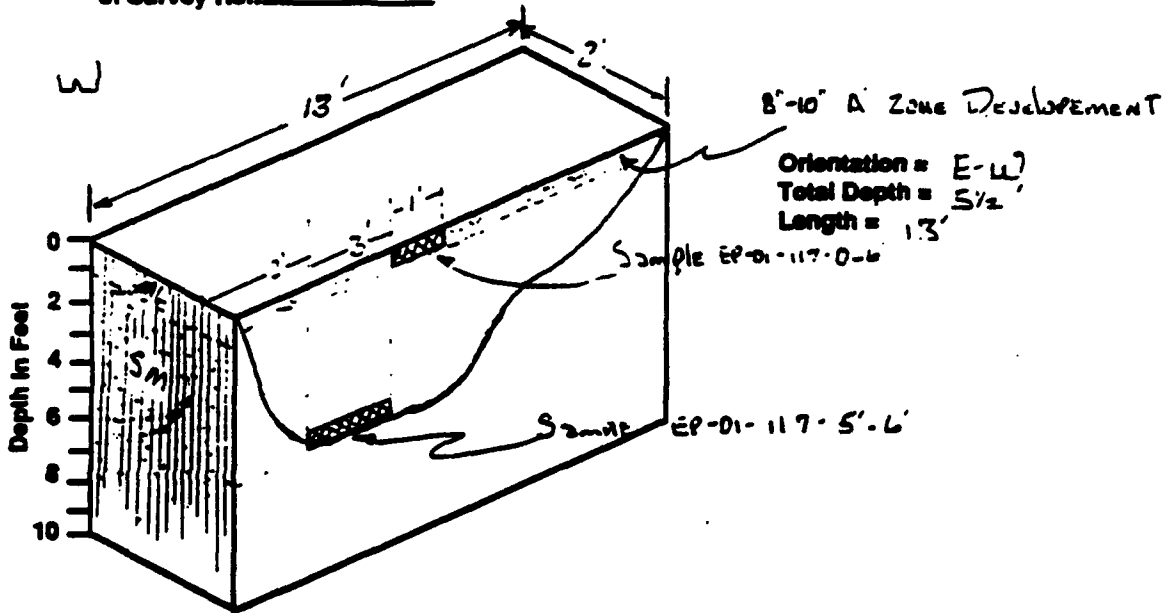


TEAD-N PHASE I RFI

# **TEST PIT EXCAVATION LOG** **James M. Montgomery, Consulting Engineers, Inc.**

SWMU NO.: 1C DLK / BLH  
 TEST PIT LOG: TP EP-01-117  
 DATE EXCAVATED: 8.10.92  
 TIME EXCAVATION BEGAN: \_\_\_\_\_  
 WEATHER CONDITIONS: Scattered clouds, hot, light breeze from north  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-117	5'-1'	ML	10YR 3/2, very dark grayish brown, dry 0% gravel, 25-30% sand, 75% fines. Low to moderate plasticity, low stiffness. Silt w/ sand. Sand is very fine to medium, sub-angular.	0-0
EP-01-117	5'-5'-6'	SM	10YR 6/4, light yellowish brown, dry. 0% gravel, ~70% sand, 30-35% fines. Low plasticity, low stiffness. Silty sand. Sand - very fine to fine, sub-angular to angular.	0-0

Comment:

Magnetic Traverse stake H.C. Note: were max 200 G. 2 small sections of wire found. otherwise undisturbed in trench. The found surface surrounding this trench is L. there are no bits of charcoal and black ash, from surface. 200 G, for a 20' radius around trench.

W = with



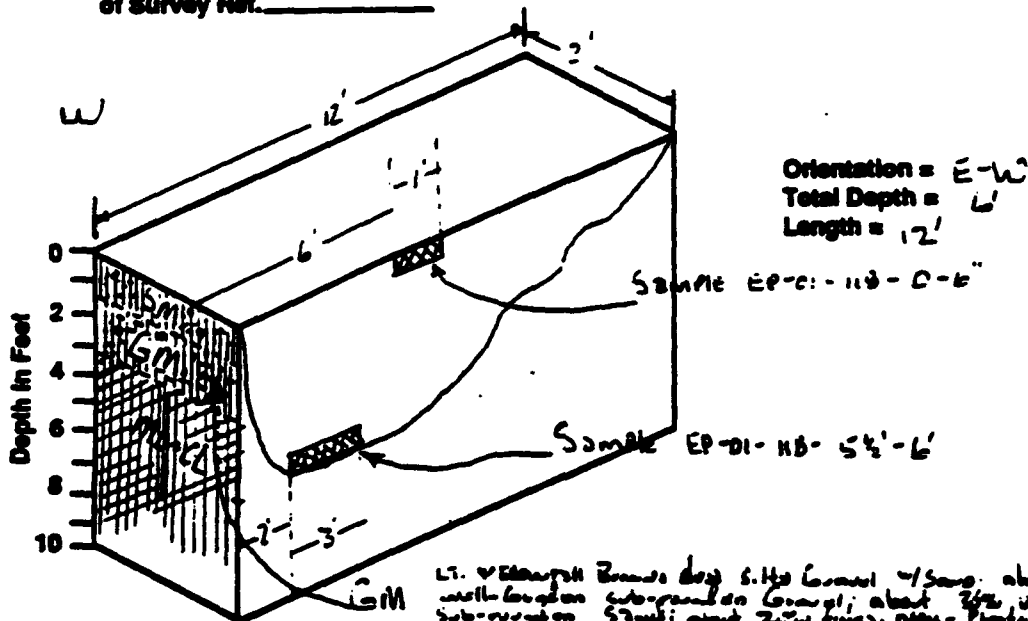
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C DLX / BKH  
 TEST PIT LOG: TP EP-01-118  
 DATE EXCAVATED: 8-10-92  
 TIME EXCAVATION BEGAN: 14:50  
 WEATHER CONDITIONS: Scattered clouds / north breeze / hot  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (R.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-118	0-5'	SM	10YR 3/1, very dark gray, dry 0% gravel, 60-65% sand, 55-60% fines. None to low plasticity, none to low stiffness. Silty sand. Sand - fine to coarse, sub-angular.	0.0
EP-01-118	5.5-6'	ML-CL	10YR 6/4, light yellowish brown, dry 0% gravel, 20-25% sand, 80% fines. Low to moderate plasticity. low stiffness. Silty - lean clay w/ sand. Sand - very fine, sub-angular to sub-round.	0.0

Comment:

No magnetic signatures. Encountered only scattered remnants of surface burning here. Remnants of wood boxes w/ wires, charcoal ash, wood fragments for 10'-15' radius. Plus scattered low areas throughout gravel area.

W/E with

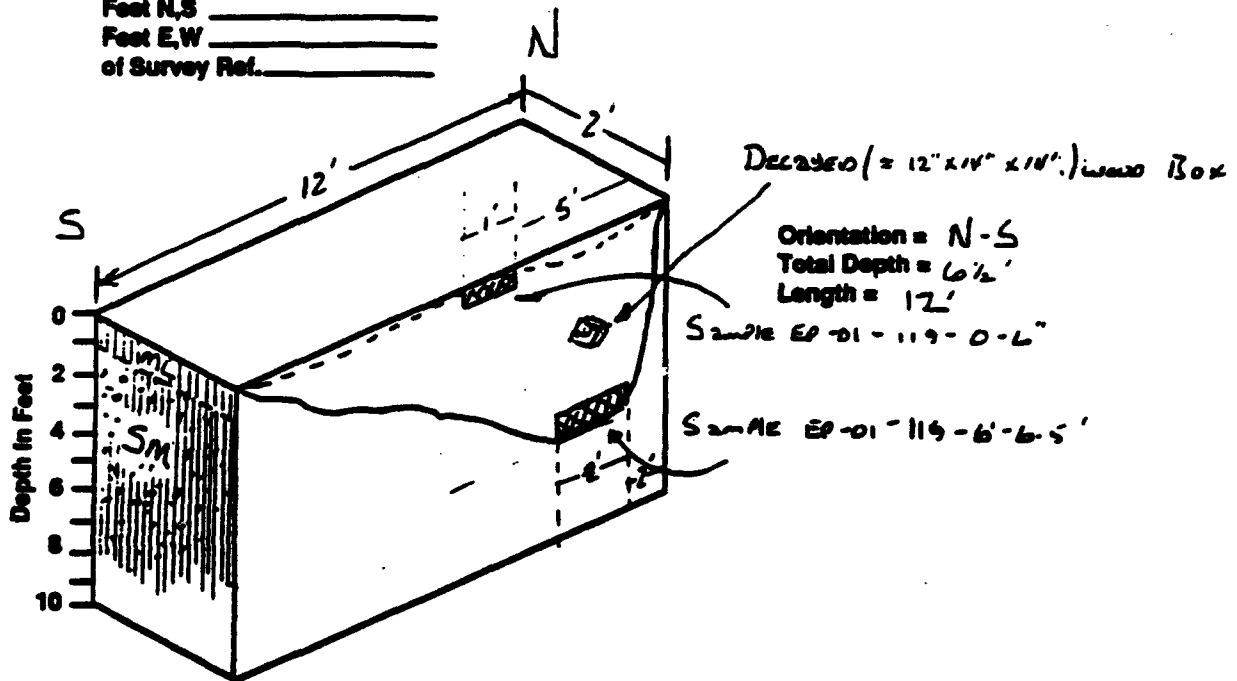


TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

## James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 C RLH / DLH  
 TEST PIT LOG: TP EP-01-119  
 DATE EXCAVATED: 8-11-92  
 TIME EXCAVATION BEGAN: 8:15  
 WEATHER CONDITIONS: clear, calm, hot (65°-90°)  
 LOCATION OF TEST PIT REFERENCE POINT:  
 Feet N/S \_\_\_\_\_  
 Feet E/W \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % f, moisture, plast.)	VOC METER READINGS
EP-01-119	0-6"	SP-BEN ML	10YR4/2, dark grayish brown, dry, low plasticity, no stiffness. 8% gravel, 36% sand, 65% fines. Silty sand. Sand is medium to very coarse, sub-angular.	0.0
EP-01-119	5.5-6.5' ↙ SM		10YR5/3, brown, dry, low plasticity, low stiffness, 0%-5% gravel, 65% sand, 35% fines. Silty sand. Sand is fine to coarse, sub-angular.	0.0

### Comment:

Magnetic sensor on stake about 60' to the south of trench shows "max weak 160 G". Trench is located in slight depression (25' dia x 2'-7" deep). Only debris noted is decayed wooden box 3'-4' BGS in northern part of trench. Remains? Treated wood?

JMM



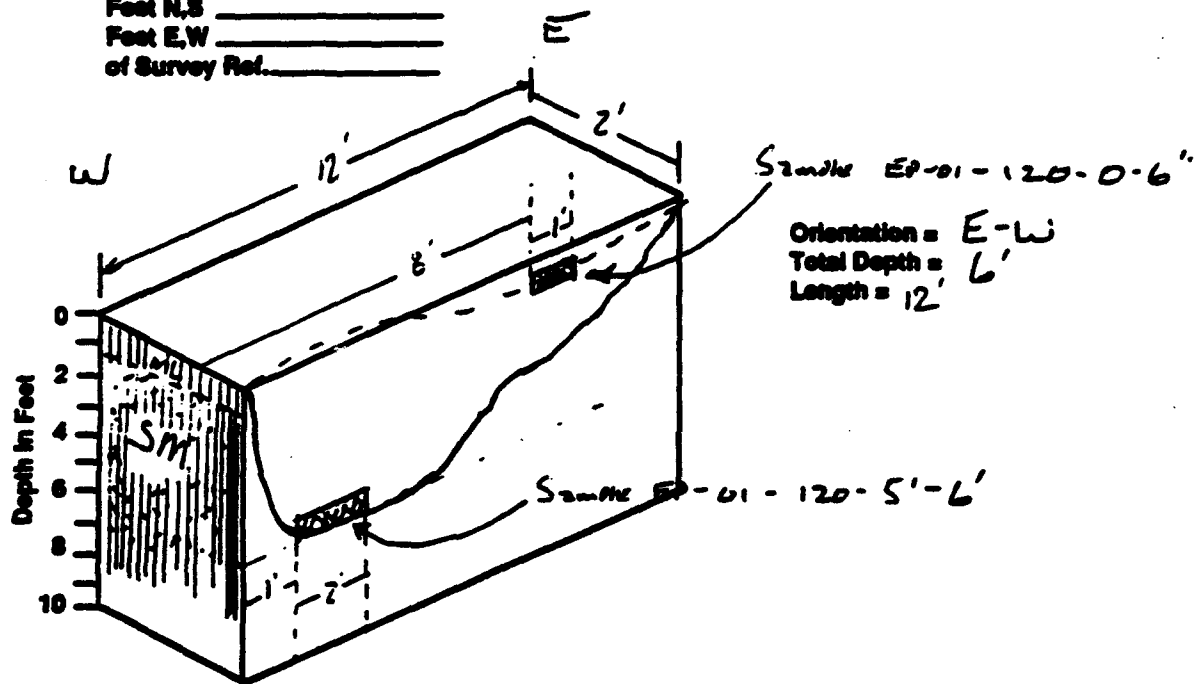
TEAD-N PHASE I RFI

# TEST PIT EXCAVATION LOG

James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C BEH / ZK  
 TEST PIT LOG: TP EP-01-120  
 DATE EXCAVATED: 8-11-82  
 TIME EXCAVATION BEGAN: 9:00  
 WEATHER CONDITIONS: clear, hot  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % fl, moisture, plast.)	VOC METER READINGS
EP-01-120	0-5'	ML	10YR 4/2, dark grayish brown, dry, low plasticity, low stiffness. 0% gravel, 40% sand, 60% fines. Silty sand. Sand fine to coarse, sub-angular.	0.0
EP-01-120	5-6'	SM	10YR 5/3, brown dry, low plasticity and stiffness, 45% gravel, 65% sand, 35% fines, Silty Sand. Sand - fine to coarse, sub-angular.	0.0

## Comment:

Trench is located in local depression and / somewhat disturbed area. No debris or evidence of buried notes. One 5-gallon solvent-type can was noted on it's side about 25' SE of trench.

JMM



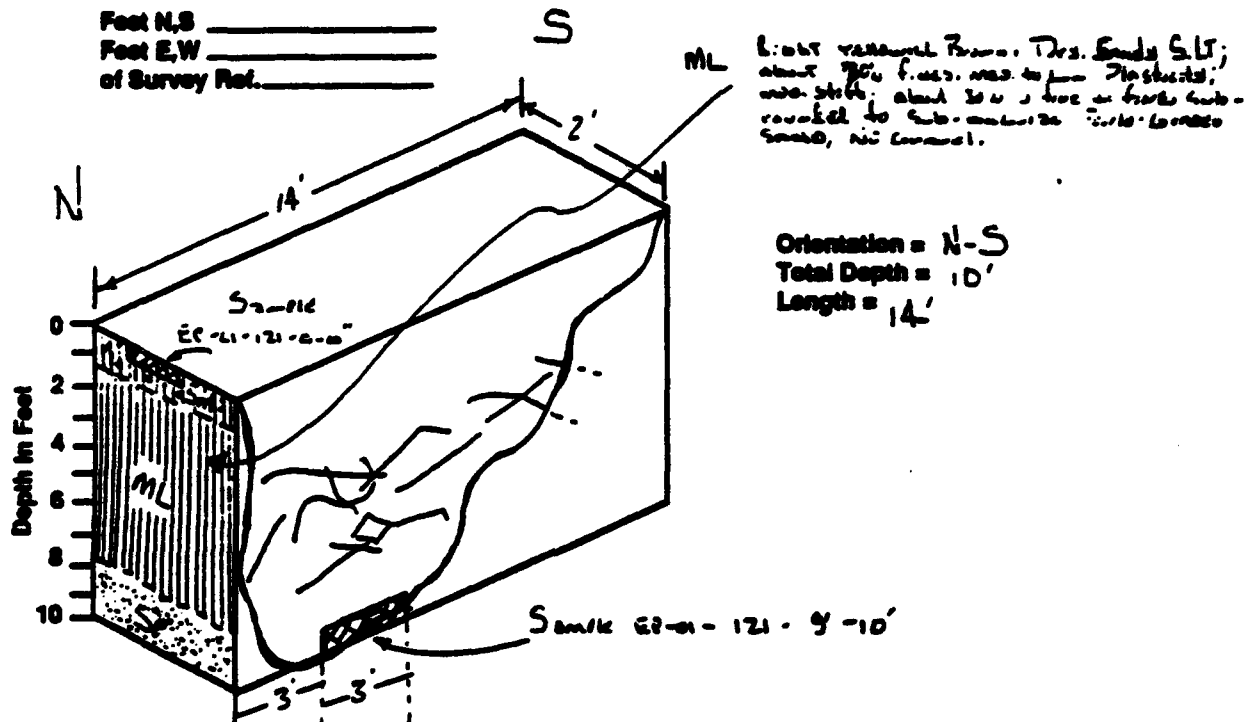
TEAD-N PHASE I RFI



# **TEST PIT EXCAVATION LOG** James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C Dec / BKH  
 TEST PIT LOG: TP EP-01-121  
 DATE EXCAVATED: 8-11-92  
 TIME EXCAVATION BEGAN: 10:20  
 WEATHER CONDITIONS: Clear Sunny 94°F  
 LOCATION OF TEST PIT REFERENCE POINT: \_\_\_\_\_

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % ss, % s, moisture, plast.)	VOC METER READINGS
EP-01-121	0-.5'	SM	10YR 5/4, yellowish brown, dry, silty sand. low plasticity and stiffness. 0% gravel, 60-65% sand, 35-40% fines. Sand is very fine to fine, sub-angular to sub-round.	0.0
EP-01-121	9-10'	SP	10YR 6/4, light yellowish brown, dry, sand. 0% gravel, 40-45% sand, 5-10% fines. Poorly graded sand. Sand is fine, round.	0.0

**Comment:**

Geophysical traverse stakes here show "straw man" + S.L.T. Trench here is mainly made iron (1 1/2") and 3" channel iron, w/ some fragments of aluminum sheeting. Some made iron is noted within the trench. AS is frame (1?). Trench was unstable and tended to cave in the S.L.T. (ML) section.



TEAD-N PHASE I RFI

# **SOIL BORING LOGS**

# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

DRAWING No. 01  
 Boring No. 58-01-001  
 Page 1  
 of 11

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

LOG SHEET NUMBER (Borepage no.) \_\_\_\_\_

GEOLOGIST F. MORETON / B. HOLDEN

DATE 7/23/92

DRILLING CONTRACTOR LITNE

DRILL RIG VT-100 HOLE DRILL

BORING DIAMETER 10"

TYPE OF SAMPLE 2.5" SPT

FLUID LEVEL	NA	DATE STARTED
TIME		7/23/92
DATE	7/23/92	DATE FINISHED
HOLE DEPTH	0-100'	7/24/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD REASON OR COMMENT
2.0							SM	0		
								1		
								2		
								3		
								4		
5-6	10	SM	10YR 5/0	0	70	30	SM	5	dry, brown, no plasticity, no	18" recovery
9								6	stiffness, silty sand; sand is	
8		ML	10YR 5/0	0	30	70	ML	7	fine, sub-round.	
								8	slightly moist, brown, low plasticity, low	
								9	stiffness, sandy silty, sand-fine,	
									sub-round	

PROJECT NO. 2042.0120



TEAD-N PHASE I RFI

Page 2  
of 1

PROJECT NO. 0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST Z. Hollaway / E. Mastor

DATE 7/23/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 01

28-81-50  
Boring No.


Page 3  
of 4

19:30

19:45

PROJECT NO. 2942.0120

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE 7/23/92
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)		FIELD READING OR COMMENT
20-25	11	ML	2.5Y 4/2	0	95	5	well	25	s. med, light olive brown, low plasticity, low		2.0
	18								to med. silty, sandy, lean clay, good		15% clay
	15								r. fine to med, sub-surface		
								1			
								2			
								3			
								4			
								5			
								6			
								7			
								8			
								9			
								10			
								11			
								12			
								13			
								14			
								15			
								16			
								17			
								18			
								19			
								20			
								21			
								22			
								23			
								24			
								25			
25-30	50	GM	10YR 5/6	10	50	30		25	dry, brown, dense, silty gravel w/ sand.		2.0
									Sand - fine to coarse.		
								6			
								7			
								8			
								9			
								10			
								11			
								12			
								13			
								14			
								15			
								16			
								17			
								18			
								19			
								20			
								21			
								22			
								23			
								24			
								25			

 v. = very  
 s. = slightly  
 A.S. = as above  
 rec. = recovery  
 up/down

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. H. F. MONTGOMERY / R. H. HANCOCK TOOELE ARMY DEPOT  
DATE 7/23/92 NORTH AREA

SWMU No. 01

Boring No. 25-01-00

Page 4  
of 11

							WATER LEVEL		TIME		DATE	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)		FIELD READING OR COMMENT	
30	16	SP-1	10YR 5/1	30	50	10	SW-1	0	DRY, DARK YELLOWISH BROWN, MEDIUM DENSE, WELL SORTED SAND OF SATY GRAIN, GRAVEL FINE, ANGULAR TO SUBANG, SAND FINE TO COARSE, SUBANGULAR TO SUBROUND.		16" RECOVERY 8 per	
↓	25							1				
31.5	36							2				
								3				
								4				
								5				
								6				
								7				
								8				
								9				
								10				
								11				
								12				
								13				
								14				
								15				
								16				
								17				
								18				
								19				
								20				
								21				
								22				
								23				
								24				
								25				
35	20						GM	35	VERY POOR RECOVERY, 2 SMALL PIECES OF GRAVEL, THERE IS ABUNDANT GRAVEL (MORE THAN CYCLONE)		0	
↓								6				
36.5								7				
								8				
								9				
								10				
								11				
								12				
								13				
								14				
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								21				
								22				
								23				
								24				
								25				

PROJECT NO.: 0120



JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MORENO / R. HARRIS / B. HOLMES TOOELE ARMY DEPOT  
 DATE 7/23/92 / 7/24/92 NORTH AREA

SWMU No. 01

Boring No. 12-45

Page 6  
 of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			FIELD READING OR COMMENT
40-45	20	SM	10YR 5/2	20	50	30	SM	40	dry, brown to dark brown, low plasticity, low to no stiffness, silty sand w/ gravel, sand is fine to very coarse, sub-round gravel, fine to coarse, sub-round.			18" recovery
	21											
	35											

PROJECT NO. 2942.0120



7/2/92

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. McLEOD / B. H. McLEOD  
 DATE 7/24/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 01

Boring No. 001

Page 6  
 of 11

							WATER LEVEL		TIME		DATE	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			FIELD READING OR COMMENT
50	2	GW	5YR 5/10	100			62-6m	50	VERY POOR RECOVERY, SANDS COARSE GRAVEL + COBBLES ABUNDANT GRAVEL THAN CYCLONE, GRAY. DENSE, WELL GRADED SAND			25'
↓	50							1				
51.5								2				
								3	COBBLES + GRAVEL THAN CYCLONE 20% SANDS + FINES			
								4				
55	1							55	A/A NO SAMPLE TAKEN AT THIS DEPTH. ABUNDANT GRAVEL THAN CYCLONE.			
↓								6				
56.5								7				
								8	COBBLES + GRAVEL THAN CYCLONE VERY FEW SANDS + FINES			
								9				

PROJECT NO. 0120





JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST

F. MONTGOMERY / B. HODGINS

DATE

7/24/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 01

Sheet No. 1

Page 1

of 11

							WATER LEVEL		TIME		DATE	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)		FIELD READING OR COMMENT	
60 .							Geom	60	A/A ABUNDANT GRAVEL + COBBLES THAN CYCLONE NO SAMPLE TAKEN AT THIS DEPTH.			
↓								1				
61.5												
~62'		ML		0	25	35	ML	2	CHANGE IN LITHOLOGY AT 62'! SL. MOIST, YELLOWISH BROWN, LOW PLASTICITY LOW STIFFNESS, SILT w/ SAND. Sand - v. fine to medium, sub-angular to sub- round. (Described from cyclone cuttings)			
								3				
								4				
65	49							65			NO REMARKS	
↓	50							6				
66.5												
								7	ABUNDANT FINES A/A THAN CYCLONE. THIS INTERMEDIATE LAYER VERY RECOVERABLE BY SPLIT SPoon SAMPLE. WELL TYPED ADDED AT 70'.			
								8				
								9				

PROJECT NO. 2942.0120



JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MONTGOMERY / G. HOLDEN  
DATE 7/24/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 01  
Boring No. 58-78-001  
Page 8  
of 11

								WATER LEVEL	TIME	DATE		
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/FID READING OR COMMENT		
70	10						SS ↓	7 0		⊖		
	30							1			POOR	
71.5	27										REMARKS	
72	-	CL	10YR 5/10	20	75		CL	2	Slightly moist, yellowish brown, moderate plasticity + stiffness, sandy lean clay; sand - very fine to fine, sub-angular to sub-round		Cyclone sample	
								3				
								4	SOME GRAVEL LAYERS (VERY THIN) ARE PRESENT IN THESE SAMPLES - DETECTED BY CHANGING CYCLONE CUTTINGS + PENETRATION TESTS.			
75	1	CL	10YR 5/10	25	70			7 5	SL. MOIST, YELLOWISH BROWN, LOW TO MODERATE PLASTICITY, LOW TO MODERATE STIFFNESS, SANDY LEAN CLAY. SAND, VERY FINE TO MEDIUM, SUB-ANGULAR	⊖	14"	
	30							6			REMARKS	
	29											
								7				
								8				
								9				



gravel = granite  
L.S. = limestone  
SL = silty

PROJECT NO. 2-0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MORTON / G. HOLDMAN  
DATE 7/24/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 58-26-1  
Boring No. 1  
Page 1 of 1

1239

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIDPHI READING OR COMMENT
80	22	GM	10YR 5/1	10	10	30	GM	80				CHANGE IN LITHOLOGY AT 80'	
	50							1				DY, BROWN TO DARK BROWN, DENSE, WETTY GRAVEL, GRAVEL FINE TO COARSE, ANGULAR TO SUBANGULAR SAND VERY FINE TO COARSE, SUBANGULAR	8" 2 3/4" I.D. SP SPON
								2				VERY DIFFERENT ORIENT, ABUNDANT CORBELS + GRAVEL THAN CYCLOPS. CORBELS TO 4"	
								3					
								4					
								5				N/A NO SAMPLE TAKEN AT THIS INTERVAL. ABUNDANT (70%) GRAVEL + CORBELS AT CYCLOPS.	
								6					
								7					
								8					
								9					

PROJECT NO. 2942.0120

I.D. = BALL BEARING



JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

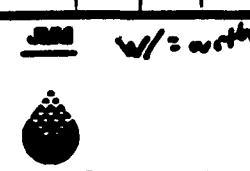
GEOLOGIST F. M. MONTGOMERY  
DATE 7/24/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 01  
Boring No. 58-78-00  
Page 10  
of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	FIELD READING OR COMMENT	
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)				
1200 90'-90.5		GM	10YR 4/6	70	20	10	GM	90				dry, yellowish brown, dense, well graded gravel w/ silt and sand; gravel - fine - coarse, sub-angular to sub-round. Sand - fine to coarse, sub-angular to sub-round.	on surface
								1					
								2					
								3					
								4					
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								6					
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								99					
								100					

PROJECT NO. 2-0120



JAMES M. MONTGOMERY. CONSULTING ENGINEERS, INC.

GEOLOGIST B. Veldman / F. Marston  
DATE 7/24/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 91

Boring No. 25-01-01

Page 11  
of 11

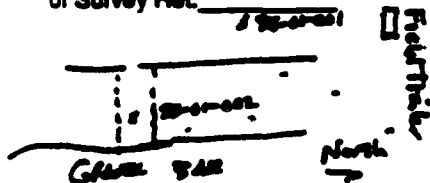
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
1336 100-101.5	12						Gm ↓ 101.5	100				A/N VERY POOR RECOVERY SAND GRAVEL + COBBLES FOR DESCRIPTIVE PURPOSES.	POOR 3"
	SD							1				SAMPLES FROM CYCLONE ARE AS ABOVE	
								2					
								3					
								4					
								5					
								6					
								7					
								8					
								9					

PROJECT NO. 2942.0120



Page 1  
Of 11

Feet N.S. \_\_\_\_\_  
Feet E.W. \_\_\_\_\_  
of Survey Plat. \_\_\_\_\_



GEOLOGIST R. Holman / E. Marshall

DATE 7/27/92

DRILLING CONTRACTOR HAVE ENVIRONMENTAL

DRIILL RIG AP 1000 Percussion Hammer

**BORING DIAMETER** 10"

TYPE OF SAMPLE 2.5" SPT

FLUID LEVEL	NA			DATE STARTED
TIME				7/27/92
DATE	7/27/92			DATE FINISHED
HOLE DEPTH	100'			7/27/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC .LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-1	-	SM	10YR 4/1	20	40	40		0	dry, dark grey, no plasticity or	0.0
							SM	1	stiffness, silty sand w/ gravel.	Surface sample
								2	Sand - fine to coarse, sub-angular gravel - fine to coarse, sub-angular.	
							SM	3		
							SM	4		
5-6	20	GM	10YR 5/1	50	35	15	GM	5	Slightly moist, brown, medium	.8 mm
	28						GM	6	dense, silty gravel w/ sand,	18" recovery
	30							7	Gravel - fine, sub-angular to sub-round. Sand -	
7-9								8	medium to coarse, sub-angular.	
								9	Picking up content in cylinder, 25%	

**PROJECT NO.**  
**2942.0120**

w/ε with

\* 710 readings due to plastic bag

## TEAD-N PHASE I RFI

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Housman / F. Menden  
DATE 2/27/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 1  
Boring No. 2  
Page 2  
of 11

Time  
11:48

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/PID READING OR COMMENT
10-11.5	25	GM	10YR 6/3	35	35	30	GM	10				Slightly moist, brown, medium to high density, silty gravel w/ sand. Gravel - fine, sub-angular to sub-round.	2.1
50								1				SAND - MEDIUM TO COARSE, SUB-ANGULAR.	Randomly scattered 8" or more
								2					
								3					
								4					
								5					
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								14					
								15				Slightly moist, dark grayish brown, dense, silty sand w/ gravel. Sand - fine to coarse, sub-angular. Gravel - fine, sub-angular.	3.5 ppm 16" near
50								6					
50								7					
								8					
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								20					

12:20

PROJECT NO. 2942.0120



ft = grading N/A - PID readings from photos by other w/ 2 with

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Harrison / F. Manton  
 DATE 7/27/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 1  
 82-015-002  
 Page 3  
 of 11

SAMPLE INTERVAL	BLOWS PER IN.	USCS SYMBOL	MINSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)		
20-24.5	33	SM	10YR 4/2	30	25	40	SM	20			
	50							1			
								2			
								3			
								4			
								5			
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								49			
								50			

Time  
 12:40

12:50

PROJECT NO. 2120



w/o with

Note: PED readings from plastic bag counts

~~the production test~~



w/ = with

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Hordeman / F. Alston  
 DATE 7/27/92


TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 1  
 38-01-001  
 Spring No.  
 Page 5  
 of 11

13:35

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	FIELD READING OR COMMENT
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			
40-45	17	ML	10YR 5/0	0	100	0	ML	40				moist, yellowish brown, no to low PLASTIC, 0 no to low STIFFNESS, SILT w/ sand. SAND - VERY FINE, sub-angular.
	29							1				
	46							2				
								3				
								4				
								45				A.A.
								6				
								7				Picking up a few scattered pieces of coarse gravel
								8				
								9				

PROJECT NO. 1120

 w/ = with

JAMES M. MONTGOMERY. CONSULTING ENGINEERS, INC.

SWMU No. 1

SB-01-00  
Boring No.

Page 6

of 11

GEOLOGIST B. Hollaway / R. Moreton  
DATE \_\_\_\_\_

TOOELE ARMY DEPOT  
NORTH AREA

13.65

							WATER LEVEL	TIME	DATE		
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)		FIELD READING OR COMMENT
50.4	-	ML	10YR 2/6	0	20	80	ML	50	slightly moist, yellowish brown, low plasticity and stiffens. SILT w/ SAND. SAND - VERY FINE, SUB-ANGULAR.		CYCLONE Sample
								1			
								2			
								3			
								4			
								55	A.A.		
								6			
								7	Change in lithology, bit gravel		
								8			
								9			

PROJECT NO. 2042.0120

ML



A.A. = as above.  
w/ = with

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Henderson / F. Alarcon  
DATE 7/27/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 1

~~SP-10-65~~  
Boring No.

Page 3  
of 11

							WATER LEVEL		TIME		DATE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			FIELD READING OR COMMENT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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								1	61' - GM 110YR 5 to 10 15	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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PROJECT NO. 4-120



JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Henderson / F. McEwen  
DATE \_\_\_\_\_

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 1

Boring No. \_\_\_\_\_

Page 2  
of 11

							WATER LEVEL	TIME	DATE	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
70'	1	GM	10YR 5/6	10	95	5	GM	0	slightly moist to dry / yellowish brown, Low Plasticity and stiffness, SIFTY GRAVEL w/ SAND.	CHOLE EXPOSE
								1	SAND - Fine to coarse, angular to sub-angular. GRAVEL - Fine to coarse, sub-round to angular.	
								2		
								3		
								4		
75-76	17	ML	10YR 5/6	0	35	65	ML	7.5	CHANGE IN LITHOLOGY - NO GRAVEL. slightly moist, low plasticity and stiffness, SAND SIFT.	0
	29								SAND - VERY FINE to FINE, SUB-ANGULAR.	
	40							6		
								7		
								8		
								9		

PROJECT NO. 2942.0120



GR. - Brown  
w/2 with

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Holloman / F. Mardian  
 DATE 7/27/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. /

SE-01-1072  
 Boring No.

Page 9  
 of 11

SAMPLE INTERVAL	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE		
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			FID/FID READING OR COMMENT	
50-81.5	9	ML	10YR 4/1	0	30	90	ML	0				dry, yellowish brown, low plasticity and stiffened, sandy silt. SAND - VERY FINE to FINE, sub- angular.	0.0 18" recovery
	15							1					
	25							2					
								3					
								4					
								5					
							ML	5.5				EA.	sample disturbed no change
								6					
								7					
								8				change in lithology, coming into gravel with sand and cobbles, less than 5%	
							ML	9					

15:50

15:55

PROJECT NO. 21120



— = gradation

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. W. Hildner / F. M. Mearns  
DATE 7/27/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 1

Boring No. 04

Page 10  
of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)		FIDPID READING OR COMMENT
90-95	21	ML	10YR 4/2	55	35	10	ML	90	Slightly moist, yellowish brown, Low PLASTICITY & STIFFNESS, Gravelly silt w/ sand.		0.0
	38							1	SAND - FINE to COARSE, SUB-ANGULAR, GRAVEL - FINE to COARSE, SUB-ANGULAR to SUB-ROUND.		11.0' recover.
	30							2			
								3			
								4			
								5	A.A.		SAME in CYCLONE
								6			
								7			
								8			
								9			

PROJECT NO. 2042.0120



W/ = with  
f = and.  
—H = gradation

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST E. Hollaway / F. Norton  
 DATE 7/27/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 1

SE-01-001  
 Series No.

Page 11  
 of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
10-12.5	9		10YR 4/2	65	35	0	6m	0				dry, pale brown, non-cohesive, medium to low density, well graded gravel w/ silt.	3.0 12" penet
	20							1				sand - fine to medium, angular to sub-angular.	
	36							2				gravel - fine to coarse, sub-round to angular.	
								3					
								4					
								5					
								6					
								7					
								8					
								9					



W/with

PROJECT NO. 2342.0120



AD-A282 574

TOOLE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SAMS

3715

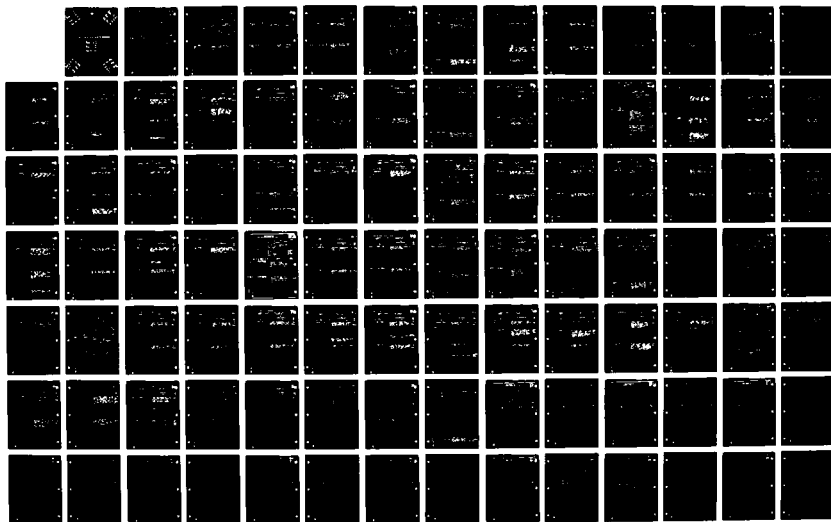
VOLUME 2 APPENDICES A - J REVISION(U) MONTGOMERY

WATSON WALNUT CREEK CA DEC 93 XA-USAEC

UNCLASSIFIED

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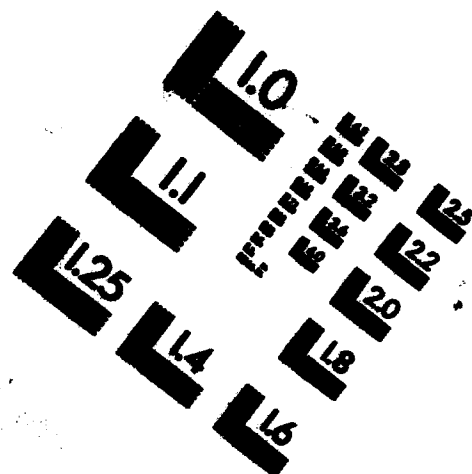
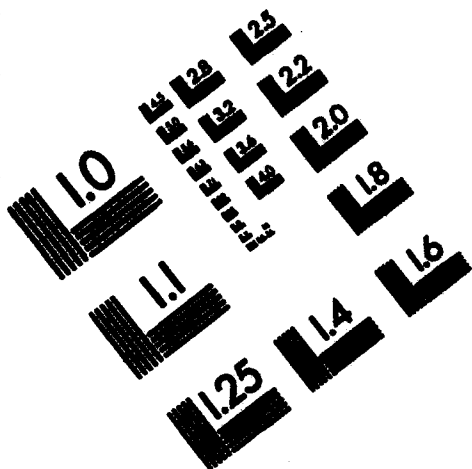
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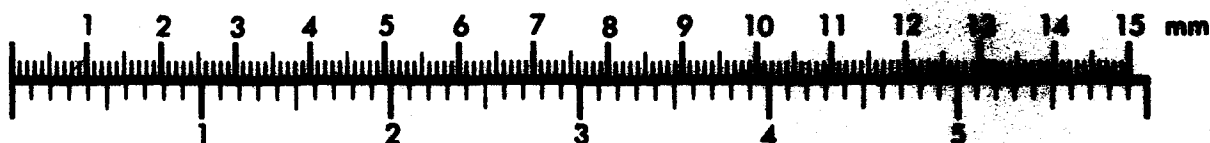


Association for Information and Image Management

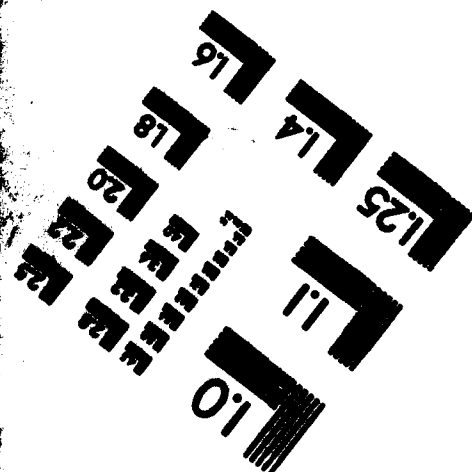
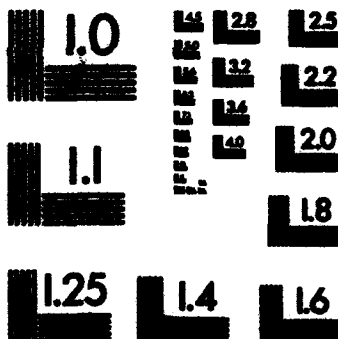
1100 Wayne Avenue, Suite 1100  
Silver Spring, Maryland 20910  
301/587-8302



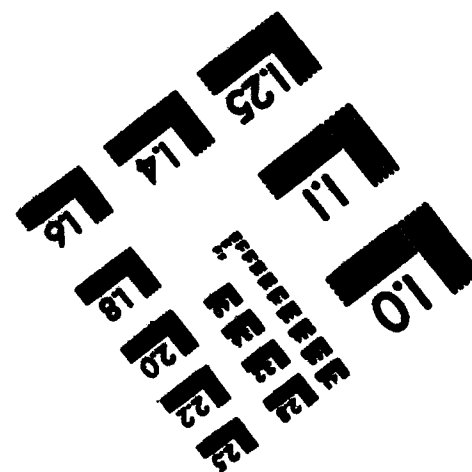
Centimeter



Inches



MANUFACTURED TO AIIM STANDARDS  
BY APPLIED IMAGE, INC.



Q 11

TYPE OF SAMPLE 2.5" SPT

of Survey Ret.

HOLE DEPTH	100 ft			DRILLING 7/26/92
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## TEAD-N PHASE I RFI

$\phi = \alpha$   
w/c = 57N  
 $v = v_{EM}$



**SWMU No.** /

**Boring No.**

Page        of LI

GEOLOGIST B. Haldeman / E. Morison  
DATE 7/26/92

**TOOELE ARMY DEPOT  
NORTH AREA**

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT		
20-25	16	ML	10R 4/6	0	100	0		20				Most, pale brown, low plasticity, Low stiffness, silt w/ sand. SAND - VERY FINE, sub-angular to sub-round.	0 18" RLL		
	16							1							
	15							2							
								3							
								4							
								5							
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								18							
								19							
								20							
25-26	15	ML	2.5Y 4/6	0	100	0			25				Most, light olive brown, low plasticity, Low to no stiffness, silt w/ sand. SAND - VERY FINE, sub-angular.	0 18" RLL	
	15								6						
									7						
									8						
							9								
							10								
							11								
							12								
							13								
							14								
							15								

**JPM**

5.  $\epsilon$  singly  
w/ a w/ STU

**PROJECT NO. 2942.0120**

Page 4

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
30-34.5	16	ML	10YR 2.5/2	0	15	90		30				Slightly moist, yellowish brown, -Low PLASTICITY and STIFFNESS, SILT w/ SAND SAND - V. FINE, 3/16-ANGULAR.	2
	15							1					
	17							2					
								3					
								4					
								5					
								6					
								7					
								8					
								9					
35-36.5	11	ML	10YR 2.5/2	0	15	90		35				6" GRAVEL LAYER (FROM CYCLONE) SLIGHTLY MOIST, YELLOW BROWN, -Low PLASTICITY, LOW STIFFNESS, SANDY SILT. SAND - VERY FINE to COARSE, 3/16- ANGULAR.	0
	7							36					
	8							37					
								38					
								39					
								40					
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								42					
								43					
								44					



JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST G. Haldeman / E. Merdow  
DATE \_\_\_\_\_

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 1

Sheet No. 1

Page 5

of 11

15:05

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additions)		
40-41	34	GM	10R 5	15	20	20	✓ CM	0			
	41							1	dry, Brown, none to Low Plab. Low to High SILTY GRAVEL w/ sand SAND - Very FINE to FINE, sub-angular. GRAVEL - FINE to COARSE, sub-angular to angular.	D	15" below
	45							2			
								3			
								4			
45-46	3						✓	5	A.A. @ 35"		
	22-23	GM	10YR 4	40	35	20	✓ ML				
	30						✓ CM	6	Into gravel & cobbles @ 46'. Slightly moist, brown non-cohesive, SILTY GRAVEL w/ sand. GRAVEL FINE to COARSE, sub- angular. SAND - FINE to MEDIUM, sub- angular.	D.D	15" below
								7			
								8			
								9			

PROJECT NO. 2842.0120

100



V. = very  
w/ 2 with  
A.A. = as above

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Hildner / F. Norton  
DATE 7/26/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 1  
15-01-003  
Boring No.  
Page 6  
of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIDPID READING OR COMMENT
1535 5-45-34	6M	1012	40	25	35		6M	50				dry, dark yellowish brown no plasticity or stiffness.	0.0
	↓											SILT GRAVEL w/ SAND.	15.0
	60							1				SAND - FINE to COARSE, SUB-ANGULAR to SUB-ROUND. GRAVEL - FINE to COARSE, ANGULAR to SUB-ROUND.	
	↓							2					
								3					
								4					
								5					NO REPLY
1548 55 50	↓							6					
565	↓							7					
								8				ELASTIC RAIN, UNCOMPRESSED, NO PLASTICITY, ADHESION, STIFFNESS, SRTY HARD w/ SAND.	FROM
								9				GRAVEL FINE TO COARSE, SUB-ANGULAR TO SUB-ROUND, SAND FINE TO COARSE, SUB-ANGULAR.	EXPOSED



w/ o with.  
SL. & SLANTY



JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1

GEOLOGIST F. M. ELLISON / B. HOLADAY  
 DATE 7/26/92

TOOELE ARMY DEPOT  
 NORTH AREA

Boring No. 7

Page 7  
 of 11

							WATER LEVEL	TIME	DATE		
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)		FID/ID READING OR COMMENT
							64	60	NO SAMPLE TAKEN AT THIS INTERVAL. GRAVEL AT CYCLONE, AS ABOVE.		
								1			
								2			
								3			
							65	4			
							66	65	NO SAMPLE TAKEN AT THIS INTERVAL		
							67	6	SL. MOST BROWN, UNCONSOLIDATED, NO PLASTICITY, NO STIFFNESS, SILTY GRAVEL - 1 SAND. GRAVEL FINE TO COARSE, SUBANGULAR TO SUBROUND. SAND FINE TO COARSE, SUBANGULAR		DETERMINED FROM CYCLONE CUTTINGS
								7			
							68	8	CHANGE IN LITHOLOGY AT 65' SEE DESCRIPTION NEXT PAGE.		
								9			

GPI 10/25 SD 30 20

PROJECT NO. 2942.0120



SL & SLOTTED  
 1/2" & 1/4"

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MONTGOMERY / B. HOLDEN  
DATE 7/26/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 1

SB-96-003

Page 8  
of 11

1607

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/ID READING OR COMMENT
70	11	CL	10YR 4/1	0	40	90	CL	70				MAY, YELLOWISH BROWN, MODERATE PLASTICITY, MODERATE STIFFNESS, LEAN CLAY. SAND, VERY FINE, SUBANGULAR, SUBROUND.	18"
↓	15							1					
71.5	15							2					
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								99					
								100					

JMB W/C WTH



PROJECT NO. 120

of 1

SWMU No.

Funkston/ & Hornum  
7/26/92

**TOOELE ARMY DEPOT  
NORTH AREA**

Boring No. 001

Page 10  
of 11

	SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
1648	90	50						GW	90				LOOSE GRAVEL ONLY IN SPLIT SPAN, NOT REPRESENTATIVE OF LITHOLOGY.	<del>5</del> 6" <del>REMARK</del>
	91.5								1					
									2					
									3					
									4					
	95'							GW	95				WATER ON PERCUSS SUPPRESSION ... IN GEOTECHNICAL SAMPLE COLLECTED @ 95' YELLOWISH BROWN, UNCONSOLIDATED, WELL GRADED GRAVEL W/ S.A.M. GRAVEL FINE TO COARSE SUBANGULAR TO SUBROUND. SAND, FINE TO COARSE, SUBANGULAR.	M/D/S STABLE
									6					
									7					
									8					
									9					



Q. AT  
w/ w/

SWMU No.

FINOZETIN 'L. KILIMBA  
1.26/92

**TOOELE ARMY DEPOT  
NORTH AREA**

## Background

Page 11  
of 61

DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/PID READING OR COMMENT
100	50	GW	10YR 5/6	75	20	5	GW	100				YELLOWISH BROWN, DENSE, WITH GRAVEL GRAVEL IN SAND, GRAVEL FINE TO COARSE, SUBANGULAR TO SOME ROUND, SAND FINE TO COARSE SUBANGULAR.	10" RECOVERED
101.5							TO = 101.5	2				TOTAL DEPTH OF THIS RECENT WITH 10" DRILL PRESS 100'. THE SPLIT SPoon WAS DRIVEN AHEAD, THE INTERNAL BEING 100-101.5'	
								3					
								4					
								5					
								6					
								7					
								8					
								9					

**PROJECT NO. 2942.0120**



# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWRIJ No. 01

Boring No. 01-004

Page 1 of 11

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
Feet E.W. \_\_\_\_\_  
of Survey Ref. \_\_\_\_\_

LOG SHEET NUMBER (Bore/page no.) 1  
GEOLOGIST F. MARETOW / B. HOLDAWIM  
DATE 7/25/92  
DRILLING CONTRACTOR LATNE  
DRILL RIG AP 1000 PERCUSSION TAMPER  
BORING DIAMETER 10"  
TYPE OF SAMPLE 2.5" SPT

FLUID LEVEL		DATE STARTED	
TIME		7/25/92	
DATE	7/26/92	DATE FINISHED	
HOLE DEPTH	100'	7/26/92	

SAMPLE INTERVAL	BLOWS PER IN	USCS SYMBOL	MUSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
SS	9	SPAL	ML	0	40	60	ML	0	DM, DARK YELLOWISH BROWN, LOW PLASTICITY, LOW STIFFNESS.	
								1	SANDY SILT. SAND VERY FINE TO FINE, SUBROUND.	
								2		
								3		
								4		
								5	SL. MOTT, DARK YELLOWISH BROWN, LOW PLASTICITY, LOW TO MODERATE STIFFNESS. SANDY SILT. SAND VERY FINE TO FINE, SUBROUND.	1.5' RECOVERY
5	9	ML	ML	0	40	60	ML	6		
↓	12							7		
6.5	9							8		
								9		

SL = SILT  
SS = SAND

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 21

GEOLOGIST F. MORENO / B. HOLWAY  
DATE 7/25/92

TOOELE ARMY DEPOT  
NORTH AREA

Boring No. 1  
Page 1 of 11

							WATER LEVEL		TIME		DATE	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			FID/ID READING OR COMMENT
10	21	ML	10YR 4/1	0	25	75	ML	10	SLIGHTLY MIST, YELLOWISH BROWN, LOW TO MODERATE STIFF FOR PLASTICITY, LOW STIFFNESS, SFT WITH SAND. SAND VERY FINE TO FINE, SUBANGULAR TO SUBROUND			16"
↓	21							1				RECON
↓	19							2				
4.5								3				
								4				
								5				
								6				
								7				
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								9				
15	14	ML	10YR 4/1	0	20	80	ML	15	SL. MIST, LIGHT YELLOWISH BROWN, LOW TO MODERATE PLASTICITY, LOW STIFFNESS, SFT W/ GRAVEL. SFT FOR SAND. SAND VERY FINE, SUBANGULAR TO SUBROUND.			18"
↓	17							6				RECON
↓	15							7				
16.5								8				
								9				
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								12				
								13				
								14				

SLT SL. MIST  
W/ S WITH

PROJECT NO. 2942.0120

Page 3  
of 11

**PROJECT NO. 20-0120**



JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. M. MONTGOMERY / L. H. HUNTER  
 DATE 7/25/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 11

Boring No. 11

Page 5  
 of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			FIELD READING OR COMMENT
30	50	GM	5YR 5/10	40	25	15	↓ GM	30				
↓								1				
31.5								2				
								3				
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SAMPLE DESCRIBED FROM CYCLONE CUTTINGS 3"  
 DRY, BROWN DENSE, SIFTY GRAVEL WITH  
 SAND, GRAVEL FINE TO COARSE, SUB-  
 ANGULAR, SOME COBBLES SURROUND, SAND  
 VERY FINE TO COARSE, SUBANGULAR

NO SAMPLE TAKEN AT THIS INTERVAL,  
 GRAVEL IS MORE AT CYCLONE

CHANGE IN LITHOLOGY @ 38.5'  
 SEE DESCRIPTION NEXT PAGE

PROJECT NO. 2942.0120

Q = AT



SL = SL STARTLY  
w/ a WFTN

Page 4  
of

83



11/20 AS Above

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. A. LARSEN / B. HOLAND  
DATE 7/26/92

TOOELE ARMY DEPOT  
NORTH AREA


SWMU No. 01  
Boring No. 004  
Page 7  
of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	FIELD READING OR COMMENT	
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)				
								60	NO SAMPLE TAKEN AT THIS DEPTH				
									A.A. Geotech. SAMPLE TAKEN				
									HEAR HEARING WATER INT. FOR				
									DUST SUPPRESSION				
								1					
								2					
								3					
								4					
								5					
65' - 6m 10 1/2 1/4 3/4 5/8 1 1/8 3/4 1 1/4 1 1/2													

65' - 6m 10 1/4 1/2 30 1 1/2 30

6m

PROJECT NO. 29-2.0120

 w/ 2 with  
105 G INJECTION  
H.A.P.S ABOVE

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Haldeney / E. Marston  
DATE \_\_\_\_\_

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 81  
Boring No. 11  
Page 2  
of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	FIELD READING OR COMMENT
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			
								0				
								1				
								2				
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								50				

75' - GM 10/15/42 to 15' 25'

GM

75' ~~dry, yellowish brown, moderate~~ dry, yellowish brown, moderate plasticity, low stiffness, slight grain in sand, grain - fine to medium sub-sand; sand. very fine to medium, sub-sand. Q.D

AA. = 15' above

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Hadaway / F. MORTON  
 DATE 7/26/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 001

Boring No. 52-01-001

Page 9  
 of 11

							WATER LEVEL		TIME		DATE	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			FID/ID READING OR COMMENT
50-55	50						Gm	0	No Recovery - was pushing cattle			D.O
	9							1				
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								83				
								84				
								85	SAME MATERIAL AS AT 75'			
								86				
								87				
								88				
								89				
								90				
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								97				
								98				
								99				
								100				

CL 100% 0.5-0.75

Gm

CL

85 SAME MATERIAL AS AT 75'

8) dry, light yellowish brown, moderate  
 plasticity, moderate shrinkage, moderate  
 dry strength, lean clay w/ sand.  
 Sand = v. fine - medium, sub-angular  
 to sub-round

W/S WSP  
 V. C RSP

PROJECT NO. 2-0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. H. Hargrave / F. M. Nelson  
 DATE 7/26/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 07

Boring No. 1

Page 1

of 1

							WATER LEVEL		TIME		DATE	

A.A. = AS ABOVE

PROJECT NO. 2942.0120

Page 11  
of 67

10:10



# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

SERIAL No. 01  
 Boring No. SB-01-0  
 Page 1  
 of 11

## **LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

LOG SHEET NUMBER (Borepage no.) \_\_\_\_\_

GEOLOGIST F. McLEOD / R. HOLSTEN

DATE 7/25/92 ~~7/25/92~~

DRILLING CONTRACTOR LATHE

DRILL RIG 4F 100 TYPE ~~100 TYPE~~ 100 TYPE

BORING DIAMETER 10"

TYPE OF SAMPLE 2.5" SPT 2.5"

FLUID LEVEL				DATE STARTED
TIME				<u>7/25/92</u>
DATE				DATE FINISHED
HOLE DEPTH				<u>7-25-92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MINNELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
<u>SPT</u>		<u>CL</u>	<u>10YR 2</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>6m</u>	0	<u>DRY, BROWN, LOOSE, SFTY</u>	
								1	<u>GRAVEL, GRAVEL FINE TO</u>	
									<u>COBBLE, SUBANGULAR TO</u>	
								2	<u>SUBROUND. SFTY VERY FINE</u>	
									<u>TO COARSE, SUBANGULAR TO</u>	
								3	<u>SUBROUND.</u>	
									<u>ABANDON BANDS + COBBLES IN</u>	
								4	<u>CYCLONE EXTENSIVE.</u>	
								5	<u>DRY, BROWN, MOD PLASTIC</u>	
									<u>MOD STIFFNESS, 1 IN CLIN</u>	
								6	<u>W/ SAND, SAND VERY FINE TO</u>	<u>12" RETURN</u>
									<u>FINE SUBANGULAR, GRAVEL FINE</u>	
								7	<u>TO COARSE, SUBANGULAR.</u>	
								8	<u>COBBLES UP TO 4" IN CYCLONE</u>	
								9		

0020

PROJECT NO. 2042.0120



TEAD-N PHASE I RFI

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST

F. MORETON / B. HOLDWAY

TOOELE ARMY DEPOT  
NORTH AREA

DATE

7/25/92

SWMU No. 01

Boring No. 005

Page 2  
of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			PROVID READING OR COMMENT
0925 10	20	SP	10YR 5/2	25	60	15	SM	10	SL. MOTT. BROWN, NO PLASTICITY, NO STIFFNESS, SILTY SAND w/ GRAVEL, 12" REIN			
	26							1	SAND VERY FINE TO COARSE, SUB ANGULAR TO SUB ROUND. GRAVEL FINE TO COARSE, SUB ANGULAR TO SUB ROUND.			
	36							2				
	11.5							3				
								4				
								5	LARGE GRAVEL + COBBLES AT TOP OF SECTION SL. MOTT. GRAYISH BROWN, MEDIUM DENSITY, SILTY GRAVEL w/ SAND, 12" REIN			
0920 15	6	GM	10YR 5/2	20	25	15	GM	6	GRAVEL FINE TO COARSE, SUB ANG- ULAR, SAND VERY FINE TO COARSE, SUB ANGULAR.			
	18							7				
	30							8	LITHOLOGY CHANGES AT $\approx 18'$ <del>SEE DESCRIPTION NEXT PAGE FOR</del> MOTT. YELLOWISH BROWN, LOW PLASTICITY, LOW TO MODERATE STIFFNESS, SILT w/ SAND, SAND VERY FINE TO FINE, SUB ROUND TO ROUND.			
								9				
								10	GRAVEL INTO LOAM CLAY AT $\approx 20'$			



SL & SLIGHTLY  
w/ GRAVEL FINE  
W/ FIN

PROJECT NO. 0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MASON / R. HOLDEN  
DATE 7/25/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 01

Boring No. 1

Page 6

of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)		
980 20	6	CL	10YR 4/2	0	10	90	CL	20			
	11							1			
21.5	7										
								2			
								3			
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1000 25	6	ML	10YR 4/2	0	15	85		25			
	10							6			
26.5	14										
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PROJECT NO. 2042.0120



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**PROJECT NO. 2942.0120**

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. H. BROWN / B. HOLCOMB  
 DATE 7/25/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 01  
 Boring RA  
 Page 4  
 of 11

1032

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	FID/FID READING OR COMMENT	
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)				
40	35	GM	10YR 5/2	35	35	30	GM	0				0	
	50							1	IL. MIST, LEANT ORGYED GRAY, DENSE, SELTY GRAVEL w/ SAND GRAVEL FINE TO COARSE SUBANGULAR SAND FINE TO COARSE SUBANGULAR TO SUBROUND.				12" RECON
46.5								2					
								3					
								4					
45	50							45	RE/11				NO RECON
								6					
46.5								7					
								8					
								9					

1047

PROJECT NO. 2942.0120



JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MOREN / B. HOWARTH  
 DATE 7/25/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 01  
 Boring No. 01-01-005  
 Page 6  
 of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
							6m	0				NO SAMPLE TAKEN AT THIS DEPTH. GATHER AT CYCLONE ITS ABOVE.	
								1					
								2					
								3					
								4					
								5				NO SAMPLE TAKEN AT THIS DEPTH. GATHER AT CYCLONE ITS ABOVE.	
								6					
								7					
								8				DRY, BROWN, UNCONSOLIDATED, WELL GRAINED GRAVEL W/ SALT & SAND. GRAVEL FINE TO COARSE W/ CIRCLES, SUBANGULAR TO SUBROUND SAND FINE TO COARSE SUBANGULAR	SAMPLE TAKEN AT CYCLONE
								9					

6m 10 1/2 10 20 5 10 6m

PROJECT NO. 2942.0120

NE 25TH



JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MORTON / B. HODGKINS  
 DATE 7/25/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 1  
 Boring No. 1  
 Page 1  
 of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/PID READING OR COMMENT
								60				NO SAMPLE TAKEN AT THIS DEPTH GRAVEL AT CYLINDER AT 60 IN.	
								1					
								2					
								3					
								4					
15-166		GM-1012	10YR 5/6	90	10%			65				dry, brown, non-cohesive - medium density, well graded gravel w/ silt and sand; Gravel - fine to cobbles, sub-angular to sub-round. Sand - fine to coarse, sub-angular.	capable of expansion
								6					
								7					
								8					
								9					

11210

PROJECT NO. 2942.0120



JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST J. Hollaway / F. Mardon  
 DATE 7/25/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 01  
 58-01-206  
 Boring No.  
 Page 8  
 of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIDPID READING OR COMMENT
70-75							6m	0				N.R. Same material as above.	
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								100					

N.R. = No recovery



PROJECT NO. 2-0120



JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. H. H. / F. M. M.  
DATE 7/25/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 01

Soil No.

Page 1 of 11

								WATER LEVEL		TIME		DATE				
								LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)						FIDUCIAL READING OR COMMENT		
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET								
0-1							GM	0	A.A.						Optical 34-36	
							GM	1								
								2								
								3								
								4								
5-6							GM	5	dry to moist yellowish brown, low to med. plasticity, low stiffness, silty gravelly sand; gravel fine to coarse, sub-angular to sub-round; sand - very fine to medium, sub-angular.							
								6								
								7								
8-9 1/2							CL	8	dry, light yellowish brown, moderate plasticity, moderate stiffness, lean clay. Gravel - very fine, sub-angular.						Optical 36-38	
							GM	9								



A.A. = As above s. = slightly  
mod. = moderate  
w/- = with

PROJECT NO. 2842.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST 3-Holdeman / F. Meador  
DATE 7/25/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 01

PK-01-005  
Boring No.

Page 10  
of 11

								WATER LEVEL		TIME		DATE		
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)				FIELD READING OR COMMENT	
90-91.5	50	GM	10YR 5/6	50	50	10-15	GM	90	A.A. <del>dry</del> dry, brown, medium density, well graded gravel w/ silt and sand. Gravel - fine to coarse, sub-round. Sand - fine to coarse, sub-angular.				Recovery 6'	
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100

N.R. = No recovery



PROJECT NO. 294-0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. M. RICH / A. H. MONTGOMERY  
 DATE 7/25/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 01

Boring No. 1

Page 1

of 1

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
10.0	35	GM	10YR 5/6	60	30	10	6m	10.0				DMY FINE GRAN, DENSE, WELL- GRADED (GRAVEL IN SORT + SAND GRAIN FINE TO COARSE, ANGULAR TO SUB- ANGULAR, SAND VERY FINE TO MEDIUM, SUB ANGULAR)	
10.5							10.5	10.5					
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								8					
								9					

PROJECT NO. 2342.0120

# SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWRIJ No. 01

Boring No. SB-01-006

Page 1 of 11

## LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
Feet E.W. \_\_\_\_\_  
of Survey Ref. \_\_\_\_\_

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST F. MORETON / B. HOLDAWAY

DATE 7/30/92

DRILLING CONTRACTOR L.H. YNE

DRILL RIG AP 1000 PERCUSSION HAMMER

BORING DIAMETER 10"

TYPE OF SAMPLE 2 1/2" SPT

FLUID LEVEL		DATE STARTED
TIME		7/30/92
DATE	7-30-92	DATE FINISHED
HOLE DEPTH	100'	7-30-92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MINNEAPOLIS COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
								0		
								1		
								2		
								3		
								4		
								5	DRY, DARK YELLOWISH BROWN, NO TO LOW PLASTICITY, NO TO LOW STEFFNESS, SILTY SAND, SAND FINE, SUBROUND.	7.5 ft 18" RECOVERY
								6		
								7		
								8		
								9		

TEAD-N PHASE I RFI



TEAD-N PHASE I RFI

PROJECT NO. 2042.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST

F. MORETON / B. HOLDEN

TOOELE ARMY DEPOT  
NORTH AREA

DATE

7/30/92

SWMU No. 01

Boring No. 1

Page 1

of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)		
2857 10 ↓ 11.5	10 12 14	SM	10YR 6/2	0	85	15	SM	10			
									MAY, YELLOWISH BROWN, NO PLASTICITY, NO STIFFNESS, SELTY SAND, SAND VERY FINE, SUBANGULAR TO SUBROUND RELATION		
								1			
								2			
								3			
								4			
								5			
								6			
								7			
								8			
								9			
1918 15 ↓ 16.5	15 15 1	CL	10YR 6/2	0	10	90	CL	15			
									MOIST, LIGHT YELLOWISH BROWN, MODERATE PLASTICITY, LOW TO MODERATE STIFFNESS, 1/4 IN CLAY IN SAND, SAND VERY FINE, SUBANGULAR TO SUB- ROUND TO ROUND		
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								100			

PROJECT NO. 2942.0120



\* GRADES INTO  
w/c WITH

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MORETON / B. HOLGATE TOOELE ARMY DEPOT  
 DATE 2/20/92 NORTH AREA

SWMU No. 01

Boring No. SK-01-026

Page 3  
 of 11

							WATER LEVEL	TIME	DATE	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
20	10	ML	10YR 4/2	0	20	80	ML	20	SL. MODST, PALE BROWN, LOW PLASTICITY, LOW STIFFNESS, SET W/ SAND. SAND - FINE, ROUND.	18" RECOVER
↓	14							1		
21.5	15							2		
								3		
								4		
								5		
								6		
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								8		
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								16		
								17		
								18		
								19		
								20		
25	20	SM	10YR 4/2	0	100	100	SM	25	WET, DARK YELLOWISH BROWN, LOOSE, SILTY SAND, SAND VERY FINE TO VERY COARSE, SUBANGULAR TO SUBROUND.	18" RECOVER
↓	16							6		
26.5	19							7		
								8		
								9		
								10		
								11		
								12		
								13		
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								15		
								16		
								17		
								18		
								19		
								20		

SL: SLTAY  
 w/s WITH

PROJECT NO. 120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. W. WARD / R. J. HUGHES TOOELE ARMY DEPOT  
 DATE 7/26/92 NORTH AREA

SWMU No. 01  
 Boring No. 28-0  
 Page 4  
 of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE		
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content: additional facts)			PIDOP READING OR COMMENT	
0152 30	11	ML 10YR 2/2		0	20	80	ML	30				MOIST, PALE BROWN, LOW TO NO PLASTICITY, LOW STIFFNESS, SAND VERY FINE TO MEDIUM, SUBANGULAR, RECENT	Span 18"
↓ 13								1					
31.5 15													
								2					
								3					
								4					
								5					
								6					
								7					
								8					
								9					
								10					
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								28					
								29					
								30					
								31					
								32					
								33					
								34					
1015 35	14	ML 10YR 2/2		0	30	70	ML	35				MOIST, PALE BROWN, LOW TO NO PLASTICITY, LOW STIFFNESS, SILT W/ SAND, SAND VERY FINE TO FINE, CL BROWN	Span 18" RECENT
↓ 15								6					
36.5 50													
↓ 15								7					
								8					
								9					
								10					
								11					
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								47					
								48					
								49					
								50					

942.0120

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MOLETON / R. HOWARD  
 DATE 7/30/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 01  
 Boring No. SR-01-006  
 Page 5  
 of 11

							WATER LEVEL		TIME		DATE	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)		FIELD READING OR COMMENT	
40	11	ML	10YR 5/6	0	20	80	AL	40	MOIST. PALE BROWN, NO TO LOW PLASTICITY, LOW STIFFNESS, SET W/ SAND. SAND VERY FINE TO FINE, SUBROUND TO ROUND.		0.00 18"	
	12							1				
41.5	15							2				
								3				
								4				
								5				
45	11	CL	10YR 5/6	0	15	85	CL	45	WET, YELLOWISH BROWN, LOW TO MODERATE PLASTICITY, LOW TO MODERATE STIFFNESS, MOD. clay SAND VERY FINE TO FINE, SUBROUND TO ROUND.		0.00 18"	
	11							6			RELAY	
46.5	27							7				
								8				
								9				

120

W/C 120

120

120

PROJECT NO. 120



JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. HOLMAN / F. MONTGOMERY  
DATE 7/30/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 01

Boring No. 01

Page 6  
of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT	
								50				NO SAMPLE TAKEN AT THIS INTERVAL As Above		
								1						
								2						
								3						
								4						
								5						
								55					CL. MAST. YELLOWISH BROWN, LOW TO NO PLASTICITY, LOW TO NO STIFFNESS, SRT w/ SAND.	SAMPLE DESCRIBED FIRST
								6					SAND VERY FINE SUBROUND TO ROUND.	CYCLING LATE 60s
								7						
								8					SOME INTERLAYERED LOAM SANDY CLAYS IN THIS SECTION	
							9							

ML 100% 0 20 80



PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. HOLDEN / F. MORGAN  
DATE 7/30/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 01  
Boring No. 206  
Page 7  
of 11

							WATER LEVEL		TIME		DATE	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			FID/FID READING OR COMMENT
60	13	ML	10YR 4/2	0	15	85	ML	60	MOIST, YELLOWISH BROWN, LOW TO NO PLASTICITY, NO STIFFNESS, SRT W/ SAND. SAND VERY FINE TO FINE, SURROUND.			5' 12"
↓	20							1				
61.5	19							1	THIS DESCRIPTION IS FOR THE BOTTOM PART (6") OF THE SPOT SPOON SAMPLE FROM 60-61.5'.			
		CL	2.5YR 5/2	0	10	90	CL	2	MOIST, LIGHT GREY BROWN, MODERATE PLASTICITY LOW TO MODERATE STIFFNESS, LEAN CLAY SAND VERY FINE, SURROUND.			
								3				
								4				
		AL	10YR 5/2	0	15	85	ML	65	SL. MOIST BROWN, MODERATE PLASTICITY LOW PLASTICITY, LOW STIFFNESS, SRT W/ SAND. SAND VERY FINE, SURROUND TO FINE.			SAMPLE DELETED FROM CYCLONE
								6				
								7				
								8				
								9	FINEST GRAVELS (45%) AT CYCLONE. GRAVEL FINE TO COARSE, SURROUND.			



v/c = 50%



coarse sand

of

[illegible]

**PROJECT NO** 2942.0120

2001 Med. & Neurology  
1/2 with

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. HOLDEN / F. MONTGOMERY  
DATE 7/30/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 01  
Boring No. 006  
Page 9  
of 11

							WATER LEVEL		TIME		DATE	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)		FIELD READING OR COMMENT	
80	10	CH	10YR 5/6	0	45	95			CH	80	MOSTLY, VERY LIGHT BROWN, MODERATE PLASTICITY, MODERATE TO HIGH STRENGTH, FAT CLAY SAND VERY FINE, SUBANGULAR.	24"
↓	11							1				
81.5	17											
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								4				
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PROJECT NO. 2 J120



JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. H. HARTMAN / F. MONTGOMERY  
 DATE 7/30/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 01

Boring No. 18-01

Page 10  
 of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
40		CH	10YR 4/1	0	45	95	CH	90				MOST, YELLOWISH BROWN, MODERATE PLASTICITY, SAND TO HEAVY PLASTICITY, MODERATE STIFFNESS. FINE CLAY SAND VERY FINE TO MEDIUM, SUBANGULAR.	SAMPLE TAKEN AT CYCLOS
								1					
								2					
								3				CHANGE IN LITHOLOGY. SAMPLE DESCRIPTION BELOW.	
								4					
95		ML	2.5Y 4/1	0	20		ML	95				SL. MOST, LIGHT YELLOWISH BROWN, LOW PLASTICITY, LOW STIFFNESS, SFT w/ SAND SAND VERY FINE TO FINE, ANGULAR TO SUBANGULAR.	SAMPLE TAKEN AT CYCLOS
								6					
								7					
								8					
								9					

SL. 3 SLIGHTLY

W/ = WTH



PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. HOWARD / F. MOORE  
 DATE 7/30/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 01

Boring No. 01-006

Page 11  
 of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
1425 100	20	GP-6m	10YR 5/2	60	20	10	GP-6m	10 0				SL. MOD. BROWN TO DARK BROWN, DENSE, MOD. DENSE TO DENSE POORLY GRAINED GRAVEL W/ SALT-SHA. GRAVEL FINE, SUB-ANGULAR TO SUB-ROUND	10"
	50							1				SAND VERY FINE TO COARSE, SUB-ANGULAR	
101.5							TO 101.5	2					
								3					
								4					
								5					
								6					
								7					
								8					
								9					

PROJECT NO. 120



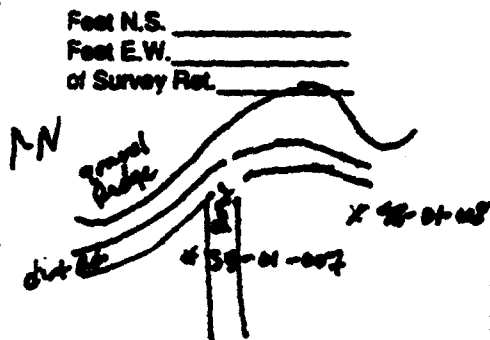
1700, 5' MOD. DENSE  
 w/ 2' MOD.

# SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Sheet No. 901  
 Boring No. 505-01-01  
 Page 1  
 of 1

## LOCATION of Soil Borings



LOG SHEET NUMBER (Borepage no.) \_\_\_\_\_

GEOLOGIST E. Masten / B. Hedberg

DATE 7/29/92

DRILLING CONTRACTOR Layne ENR.

DRILL RIG AP 100 Percussion Hammer

BORING DIAMETER 10"

TYPE OF SAMPLE 2.5" SPT

FLUID LEVEL		DATE STARTED
TIME		<u>8-29-92</u>
DATE	<u>7/29/92</u>	DATE FINISHED
HOLE DEPTH	<u>100'</u>	<u>7-29-92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-1'		ML	2.5Y 5/6	0	100	0		0	dry, light olive brown, low plasticity, low stiffness, sandy silt; very fine sand very fine sub-angular to sub-round	0.0
1-2'								1		
2-3'								2		
3-4'								3		
4-5'								4		
5-6'	10	ML	2.5Y 5/6	0	100	0		5	dry, light olive brown, low plasticity, low stiffness, sandy silt; sand very fine, sub-angular to sub-round	0.0
6-7'	11							6		18" recover
7-8'	11							7		
8-9'								8		
9-10'								9		

PROJECT NO. 2042.0120

TEAD-N PHASE I RFI

SWMU No. ( )  
Boring No. 007  
Page 2  
of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PDPID READING OR COMMENT
10-16.5	10	ML	2.5Y	0	20	80	ML	10				slightly moist, light yellowish brown, low plasticity, low shrinkage, silt w/ sand. sand - very fine, sub-angular.	0.0 18" rec
	11							1					
	12							2					
								3					
								4					
								5					
								6					
								7					
								8					
								9					
16.5-16.5	11	ML	2.5Y	0	8	65	ML	15				slightly moist, light yellowish brown, low plasticity and shrinkage, silt w/ sand. sand - very fine, sub-angular to sub-round.	0.0 18" rec
	13							6					
	15							7					
								8					
								9					
								10					
								11					
								12					
								13					
								14					
								15					
								16					
								17					
								18					
								19					
								20					

**PROJECT NO. 2942.0120**

$w_i$  = with



Page 2  
of 11

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Holdaway / F. Manton  
 DATE 7/22/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 1  
 Boring No. 51-084  
 Page 4  
 of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
30-35	10	ML	2.5	5	0	100		30				s. moist, light brownish gray, low to moderate plasticity, low stiffness, silt w/ sand. Sand - very fine, sub-angular to sub-round.	0.0 18" rec.
	17												
	13							1					
								2					
								3					
								4					
35-36	11							35				AA.	
	10	CL	10	0	0	100							
	19							6				moist, light olive brown, moderate plasticity, moderate stiffness, lean clay.	0.0 18" rec.
								7					
								8					
								9					

s. = slightly w/ or with  
 = gradational

PROJECT NO. 29-0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST R. Haldeman / F. Norton  
DATE 7/29/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 11-01  
Boring No. 11-01  
Page 11 of 11

							WATER LEVEL		TIME		DATE	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			FIELD READING OR COMMENT
40-44.5	7						CL	40	A-1.			0.0
26	ML	10YR 5/4	0	20	80		ML	40.5	slightly moist to moist, yellowish brown, low to moderate plasticity, low stiffness, silty w/ sand. S&A - VERY FINE, SUB-ROUND			
31								1				
								2	First appearance of coarse, sub-round gravel at surface.			
							Gm	3				
								4				
45-46	10	Gm	10YR 5/3	30	70	30		45	very slightly moist, dark yellowish brown, low plasticity, no to low stiffness, silty gravel w/ sand. S&A - FINE to coarse, angular to sub-round. GRAVEL - FINE to coarse, sub-angular to sub-round.			9" rec
50								6				
								7				
								8				
								9				



A.A. = 1/2 Agave  
H = gradual  
w/o with

PROJECT NO. 2042.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Hordaway / E. Manton  
 DATE 7/28/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 1

Boring No. 27-01-004

Page 6  
 of 11

								WATER LEVEL		TIME		DATE	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)		FIELD READING OR COMMENT	
15-26	50	GM	10YR 4/6	50	30	10-15		GM	0	Gr4, dark yellowish brown, dense, silty gravel w/ sand.		0 10" rec	
									1	Gravel - fine to coarse, sub-angular to sub-rounded. Sand - fine to medium, angular to sub-rounded.			
									2				
									3				
									4				
									5	A.A.			
									6				
									7				
									8				
									9	silty sand / coarse			

PROJECT NO. 20-01-0120



A.A. = 15 blow  
 w/o water

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1

GEOLOGIST B. Williams / E. MARTIN

TOOELE ARMY DEPOT  
NORTH AREA

DATE 7/29/92

Page 1  
of 11

							WATER LEVEL	TIME	DATE		
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT	
60-65 50		GC	10R5/1	70	20	10	GC	60	Silt w/ sand LENS, only 3" recovery IN SPT - MUST HAVE BEEN DISTURBED CABLE	0.0	3' from
								1	dry, yellowish brown, moderate plasticity, low to moderate stiffness, clayey gravel w/ sand.	From	sample
								2	Gravel - fine to coarse, angular to sub-round. Sand - fine, sub-angular to sub-round.		
								3			
								4			
								65	AA.		
								6			
								7			
65-70 60		GC	10R5/1	70	20	10	GC	8	dry, brown, LOW PLASTICITY & STIFF-EXPOSED SS, WELL GRADED GRAVEL w/ SILT SAND AND SAND. GRAVEL - FINE TO COARSE SAND - ANGLULAR TO SUB-ROUND.		
								9	SAND - VERY FINE TO FINE, SUB- ANGULAR TO SUB-ROUND.		

15' 70"

60-65 INCHES TO 15' 70"

GC  
GC

Silt w/ sand LEAST, only 2" recovery  
IN SPT - MUST HAVE BEEN DISTURBED  
CARBIDE  
dry, yellowish brown, moderate plasticity, low to moderate stiffness. Clayey gravel w/ sand.  
Gravel - fine to coarse, angular to sub-round. Sand - fine, sub-angular to sub-round.  
AD.  
dry, brown, LOW PLASTICITY & STIFF-CLAYEY, WELL GRADED GRAVEL w/ SILT SAND AND SAND. GRAVEL - FINE to COARSE, SUB-ANGULAR to SUB-ROUND.  
SAND - VERY FINE to FINE, SUB-ANGULAR to SUB-ROUND.

PROJECT NO. 2342.0120



# Grading

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 001

515-67-001  
Boring No.

GEOLOGIST R. H. H. / C. M. M.  
DATE 7/25/92

TOOELE ARMY DEPOT  
NORTH AREA

Page 1  
of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MINSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
							6w 6m	0					
							6w 6m	1					
								2					
								3					
								4					
								5					
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								46					
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								49					
								50					



A.A. As Above

PROJECT NO. 20-120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Holden / F. Morston  
 DATE 7/29/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 1

Boring No. 1

Page 9  
 of 11

15240

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
0'	—	GM	10YR 5/6	15	85	GM		0				dry, yellowish brown, low plasticity, A.O. STIPPLES, SILTY GRAVEL w/ SAND. GRAVEL - FINE TO MEDIUM CARRIES, sub-angular to sub-round. SAND - VERY FINE, SUB-ROUNDED.	reveal sample
1								1					
2								2					
3								3					
4								4					
5								5					
6								6					
7								7					
8								8					
9								9					

PROJECT NO. 2942.0120



w/ = with  
 AA. As Above

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Hordman / F. Hutton  
DATE 7/29/02

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 021

Boring No. 15-01-087

Page 10

of 11

16:10

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE			
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			FIELD READING OR COMMENT		
90'	-	GM	10YR 5/6	15	85		GM	9 0				dry, yellowish brown, low plasticity, clay w/ low stiffness, SILTY GRAVEL w/ sand. Gravel - FINE, sub-angular. SAND - VERY FINE TO FINE, sub-angular TO sub-round.		
								1						
								2						
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								98						
								99						
								100						

AA = As above  
w/ 2 with



PROJECT NO. 9120



SWMU No. (

Board No.

Page 11  
of 11

GEOLOGIST B. W. Williams  
DATE 7/29/92

**TOOELE ARMY DEPOT  
NORTH AREA**

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)		FID/PID READING OR COMMENT
1720 10-125 50		GM	10YR 5/6	40	15	45	6m	100			
								1	dry, yellowish brown, low plasticity low to no stiffness, silty gravel w/ sand. gravel fine to coarse, sub-angular to angular. sand - very fine to fine, sub-angular.		9" reading 0-0
								2			
								3			
								4			
								5			
								6			
								7			
								8			
								9			

**PROJECT NO. 2942.0120**



# SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01  
 Boring No. SB-01-008  
 Page 1  
 of 11

## LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

LOG SHEET NUMBER (Borepage no.) 1  
 GEOLOGIST B. HOLDEN/ F. MORETON  
 DATE 7/28/92  
 DRILLING CONTRACTOR LAYNE  
 DRILL RIG M 1000 PERCUSSION HAMMER  
 BORING DIAMETER 10"  
 TYPE OF SAMPLE 2 1/2" SPT

FLUID LEVEL		DATE STARTED	
TIME	<u>0900</u>	DATE	<u>7/28/92</u>
DATE	<u>7/26/92</u>	DATE FINISHED	
HOLE DEPTH	<u>100'</u>		<u>7/29/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MINSEI COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
<u>0-1</u>		<u>ML</u>	<u>10YR 5/6</u>	<u>0</u>	<u>100</u>	<u>0</u>	<u>ML</u>	<u>0</u>	<u>DM, YELLOWISH GRAY, LOW</u>	<u>⊖</u>
								<u>1</u>	<u>PLASTICITY, NO STIFFNESS,</u>	
								<u>2</u>	<u>SANDY SILT, SANDY SILT-FINE</u>	
								<u>3</u>	<u>SAND, VERY FINE TO MEDIUM,</u>	
								<u>4</u>	<u>SUBANGULAR</u>	
								<u>5</u>		
								<u>6</u>		
<u>5</u>	<u>7</u>	<u>ML</u>	<u>10YR 5/6</u>	<u>0</u>	<u>100</u>	<u>0</u>	<u>ML</u>	<u>5</u>	<u>SL. MIST, PALE BROWN, NO PLAS-</u>	<u>⊖</u>
<u>↓</u>	<u>10</u>							<u>6</u>	<u>TICITY, LOW STIFFNESS, SANDY</u>	<u>15% recovery</u>
<u>6.5</u>	<u>12</u>							<u>7</u>	<u>SILT, SAND VERY FINE, SUB-</u>	
								<u>8</u>	<u>ANGULAR</u>	
								<u>9</u>		

PROJECT NO. 2942.0120

SEE SKETCH



TEAD-N PHASE I RFI

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST

B. HOLMAN / F. MASON

TOOELE ARMY DEPOT  
NORTH AREA

DATE

7/28/92

SWMU No. 01

Bores No. 1

Page

of 11

							WATER LEVEL		TIME		DATE	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			FID/PID READING OR COMMENT
10	10	AL	10YR 4/2	0	25	75	ML ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	10	SL. MIST, LIGHT YELLOWISH BROWN, LOW PLASTICITY, LOW STRENGTHS, SFT w/ SAND, SAND VERY FINE TO MEDIUM, ANGULAR			18"
↓	15							1				
11.5	15							2				
								3				
								4				
								5				
								6				
								7				
								8				
								9				
15	6	SM	10YR 4/2	0	60	40	SM ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	15	SL. MIST, BROWN, LOW TO NO PLASTICITY, NO STRENGTHS SFTY SAND. SAND MEDIUM, SUBANGULAR TO SUBROUND			18"
↓	21							6				
16.5	25							7				
								8				
								9				
								10				
								11				
								12				
								13				
								14				

PROJECT NO. 2942.0120



SL = SLIGHTLY  
W/C WITH

— H — GRAVEL & SAND

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01

GEOLOGIST F. M. MONTGOMERY / B. H. MONTGOMERY  
DATE 7/28/92

TOOELE ARMY DEPOT  
NORTH AREA

Boring No. 008

Page 3  
of 11

							WATER LEVEL		TIME		DATE	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			FID/PID READING OR COMMENT
70	12	SM	10YR 6/0	0	100	30	SM	20	SL. MOIST TO DRY, BROWNISH YELLOW, NO PLASTICITY, LOW STIFFNESS, SFTY 18"			0.00
	16							1	SAND, SAND VERY FINE TO FINE, SUBANGULAR.			RECORDED
215	17											
								2				
								3				
								4				
								5				
25	9	ML	10YR 6/0	0	100	30	ML	25	SL. MOIST, BROWN, LOW PLASTICITY, LOW STIFFNESS, SFTY 18"			0.00
	13							6	FINE, SUBROUND.			RECORDED
265	12											
								7				
								8				
								9				

SL. = SLIGHTLY

ML = MEDIUM

SM = SAND



PROJECT NO. 120

SWMU No. 0/

**TOOELE ARMY DEPOT  
NORTH AREA**

**Derivative Not**

Page 7  
of 11

1027PROJECT NO. 2942.0120

JUNE SL = SUNDAY

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MORENO / E. HOLDEN  
 DATE 7/28/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 01  
 Boring No. 009  
 Page 1 of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE		
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			PROBID READING OR COMMENT	
40	10	ML	10YR 6/2	0	20	80	ML	40				SL. MAST, PALE BROWN, LOW TO MODERATE PLASTICITY, LOW STRENGTH. S.F.T. W/ SAND, SAND, SUBROUND, SUB ANGULAR, VERY FINE.	18"
41.5	13							1					
	12							2					
								3					
								4				BELOW 15' FOUND UP SMALL AMOUNT (25%) GRAVEL AT CYCLONE, GRAVEL FINE TO COARSE, SUB ANGULAR, SUB ROUND	
45							ML	45				NO SAMPLE COLLECTED AT THIS INTERVAL. AS ABOVE AT CYCLONE.	
46.5								6					
								7					
								8					
								9					

PROJECT NO. 20-1120



W & L WITH  
 SLE SLOTTED

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01

Boring No. 6

Page 6 of 11

GEOLOGIST F. MORETON / R. HARRISON  
DATE 7/28/92

TOOELE ARMY DEPOT  
NORTH AREA

								WATER LEVEL	TIME	DATE		
								LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			FIELD READING OR COMMENT	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET				
1052 50	12	ML	10YR 4/1	0	35	65	CL	0	DRY TO EL. MAST, YELLOWISH BROWN, LOW PLASTICITY, LOW TO MODERATE STIFFNESS, SANDY SFT. SAND VERY FINE TO FINE, SUBANGULAR TO SUBROUND.			Open 18" RETURN
↓	17							1				
51.5	22							2				
								3				
							CL	3	GRAVEL, FINE TO COARSE (15+%) (GRAVEL 45%) AT CL. LENS SUBANGULAR TO SUBROUND			20% GRAVEL
								4				
								5				
								6				
1105 55	15	CL	10YR 4/1	25	15	60	CL	5	SL. MAST, PALE BROWN, LOW TO MODERATE PLASTICITY, LOW TO MODERATE STIFFNESS, LENS LAY W/ SAND, SAND VERY FINE, SUBANGULAR TO SUBROUND			Open 18" RETURN
↓	18							6				
52.5	22							7				
								8				
							CL	9				
								10				
								11				
								12				

942.0120

PROJECT NO. 2942.0120



SL. = SLIGHTLY  
CL. = CLAYSTONE  
w/c with

**SWMU No. 01**

**TOOELE ARMY DEPOT  
NORTH AREA**

Boring No. 1 -

Page 7  
of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/FID READING OR COMMENT
60	13	ML	10YR 5/6	0	95	5	ML	0				DRY, YELLOWISH BROWN, - ON PLASTERED, LOW STIFFNESS. SAND, V. FINE, SUB-ROUND	18° REDUPT
↓	21							1					
61.5	26							2					
26								3					
								4					
								5					
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								58					

L.9 = Lime stone

## ++ Grading

PROJECT NO. 20-120



**SWMU No.** 26

**TOOELE ARMY DEPOT  
NORTH AREA**

## Background

Page 1 of 1

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
10	50						6m	0				VERY POOR RECON, FEW PIECES OF COARSE GRAVEL, NOT REPRESENTATIVE OF LITHOLOGY	4" RECON 8 PER
765							6m	1					
		60-70%		60	30	10%	6m	2				DRY, DARK YELLOWISH BROWN UN- CONSOLIDATED, WELL GRADED GRAVEL & SILT + SAND. GRAVEL, FINE TO MEDIUM, SUB ANGULAR TO SUBROUND.	WELL FRACTION CYCLONE CONTENTS
								3				SAND, VERY FINE TO VERY COARSE, SUBANGULAR	
								4					
							6m	7.5				NO SAMPLE TAKEN AT THIS INTERVAL. CONTENTS AT CYCLONE AS ABOVE	
								6					
								7					
								8					
								9					

DATE w/e 12/11/11

**PROJECT NO. 2942.0120**

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01

GEOLOGIST F. MCGEE / B. HOLWAY  
DATE 7/28/92

TOOELE ARMY DEPOT  
NORTH AREA

Boring No. 008

Page 9  
of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/ID READING OR COMMENT
							6w- Gm	0				NO SAMPLE TAKEN AT THIS INTERVAL	
								1					
								2				DRY, YELLOWISH BROWN, UNCONSOLIDATED, WELL-SORTED SAND w/ SPT + SAND, GRAVEL FINE TO COARSE (40%), SUB ANGULAR TO SUBROUND, COBBLES (10%) SUBROUND, SAND FINE TO VERY COARSE, SUBANGULAR.	SAMPLE DISTURBED FROM CYCLONE CONTENTS
								3					
								4					
								5				NO SAMPLE TAKEN AT THIS INTERVAL. CONTENTS AT CYCLONE AS ABOVE.	
								6					
								7					
								8					
								9					

100 w/c water



PROJECT NO. 120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. McLETON / B. HOLMAN TOOELE ARMY DEPOT  
 DATE 7/28/92 / 7/29/92 NORTH AREA

SWMU No. 21

Boring No. 16

Page 11  
 of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	FIELD READING OR COMMENT	
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)				
90							6W- 6W- H	90				6"	
								90	GRAVEL CHANGE IN LITHOLOGY				REMOVED
								1	FROM 90-100' WITH GRAVEL				
								1	PERCENTAGE DECREASING + THE PERCENTAGE OF FINES INCREASING.				
91.5								2	THERE IS INTERBEDDING OF THE GRAVELS + FINES.				
								3					
								4					
								4.5					
95	16	6W- 6L		50	15	35	6W- 6L	95	DFT. YELLOWISH BROWN DENSE, SRTY/ CLAYEY GRAVEL W/ SAND, GRAVEL				8"
	50							6	FINE TO COARSE, SUBROUND TO SUBANGULAR SAND VERT FINE TO FINE, SURROUND FINES - LOW TO MODERATE PLASTICITY, LOW TO MODERATE STIFFNESS.				REMOVED
96.5								7					
								8					
								9					

TRANSITION ZONE

PROJECT NO. 2042.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MONTGOMERY / R. HOLCOMB  
 DATE 7/29/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No. 01

Boring No. 008

Page 11  
 of 11

							WATER LEVEL		TIME		DATE	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MINSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)		FID/PID READING OR COMMENT	
100	16	CL	10YR 5/1	0	15	85	CL	100	SL. MORT, LIGHT YERLOWISH BROWN, MODERATE PLASTICITY, MODERATE STRENGTH, LEAN CLAY w/ SAND. SAND VERY FINE TO FINE, SUB ANGULAR TO SUB ROUND		Top 15" RECENT	
↓	30							1				
101.5	35											
							T.O. 101.5	2	THE 10" BOREHOLE GOES TO 100'. THE 18" SPLIT SPOON WAS DRIVEN ATTEND FROM 100 - 101.5'			
								3				
								4				
								5				
								6				
								7				
								8				
								9				

THE 10" BOREHOLE GOES TO 100'. THE  
 18" SPLIT SPIN WAS DRIVEN AFTERNO  
 FROM 100 - 101.5'

SL. & SLOWLY  
 w/ & w/



PROJECT NO. 120

**RESEARCH**

## Working title

Page 1

or 10

## LOG SHEET NUMBER (Bore/page no.)

GEOLOGIST F. MORETON / D. ORMER

DATE 7/22/92

DRILLING CONTRACTOR LAYNE

DRILL RIG AP 1000 PERCUSSION HAMMER ETC

BORING DIAMETER 10"

TYPE OF SAMPLE 2.5" SPT

Foot N.S. \_\_\_\_\_

Foot E.W. \_\_\_\_\_

of Survey Ret. \_\_\_\_\_

FLUID LEVEL				DATE STARTED
-------------	--	--	--	--------------

TIME				7:22:42
------	--	--	--	---------

DATE	7/27/22	DATE FINISHED
------	---------	---------------

HOLE DEPTH	100'			7-22-92
------------	------	--	--	---------

[illegible]

**JAMES**



## TEAD-N PHASE I RFI

**PROJECT NO. 2942.0120**

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.

GEOLOGIST F. MORTON / D. ORRIN  
 DATE 7/22/92

TOOELE ARMY DEPOT  
 NORTH AREA

SWMU No.  
15-22-800  
 Boring No.  
 Page 2  
 of 10

1213

1245

PROJECT NO. 29-0120

							WATER LEVEL		TIME		DATE	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)		FIELD READING OR COMMENT	
10-15	26	2-2	2.5YR 5/2	50	30	45	GP	10	DRY, OLIVE BROWN, DENSE TO VERY DENSE, POORLY GRADED GRAVEL W/ SFT + SAND GRAVEL, FINE, SUB-ANGULAR, SAND, FINE TO COARSE, SUBANGULAR TO SUBROUND.		Open	
15-16.5	26	ML	10YR 4/1	0	100	100	ML	15				
	31							16	MOIST BROWN TO DARK BROWN, NON TO LOW PLASTICITY, NON TO LOW STICKINESS, SFT W/ SAND. SAND, FINE, SUB ANGULAR.		Change in litho- 1064 MFT 16-12'	
	34							17				
								18				
								19				



Transition

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST MONTGOMERY / DAKINDATE 7-22-92TOOELE ARMY DEPOT  
NORTH AREA

SWMU No.

50-24-001  
Boring No.

Page

of 4

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			FID/FID READING OR COMMENT
1312 20-20.5	17	GM	2.5Y 7/2	60	25	15	GM-6M	20	DRY OLIVE BROWN, DENSE, SILTY GRAVEL. GRAVEL PENE, SUB ANGULAR.			CHANGES TO GRAVEL AT ABOUT 20.5'
	36							21	SAMPLE GRADES FROM GM TO GW. GRAVEL LOSS OF FINES.			
	51	GM						22				
								23				
								24				
14 25-26.5	32	GM	2.5Y 7/2	60	25	15	GM-6M	25	MOIST, OLIVE BROWN, DENSE, MODERATELY GRAVEL GRAVEL SILTY + SAND. GRAVEL PENE, SUBANGULAR, SAND, VERY FINE TO COARSE, ANGULAR TO SUB ROUND.			NET BEFORE D 26' POOR RECOVERY
	50	GM						26	SAMPLE GRADES FROM COARSE TO COARSE SIZED GRAVEL TO FINE GRAVEL AT BOTTOM OF SAMPLE.			E 10"
								27				
								28				
								29				

942.0120

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST MONTGOMERY  
DATE 7-22-92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No.  
55-28-000  
Boring No.  
Page 4  
of 10

								WATER LEVEL		TIME		DATE	
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MINSELL COLOR	% GRAVEL	GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			FIDPID READING OR COMMENT
20-22.5	16	CL-4	10YR 2/4	0	5	95	25	CL-4	20	SL. MOST, DARK YELLOWISH BROWN, MEDIUM PLASTICITY, MEDIUM STIFFNESS, LETHAL CLAY WITH SAND, GRADUALLY TO MATT CLAY w/ SAND. SAND VERY FINE, SUB ANG.			Good
	32								21	SL. MOST, DARK YELLOWISH BROWN, DENSE SITY GRAVEL w/ SAND, GRAVEL FINE, ANGULAR, SAND FINE TO COARSE, SUB ANHUAL.			16"
	47	GM	10YR 2/4	25	40	35	15	GM	22				
									23				
									24				
									25				
									26				
									27				
									28				
									29				
									30				
									31				
									32				
									33				
									34				
									35				
35-36.5	50	GC	10YR 2/4	25	40	35	15	GC	35	SL. MOST, DARK YELLOWISH BROWN, DENSE, CLAYEY GRAVEL w/ SAND GRAVEL, FINE, SUBANGULAR TO SUBROUND, SAND VERY FINE TO COARSE, SUB-ANGULAR TO SUBROUND, FINE, MOD PLASTICITY, MOD STIFF.			At 35.5' 6" REMOVED
									36				
									37				
									38				
									39				

PROJECT NO. 2942.0120



Transition



JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No.

SP-21-00  
Form No.

Page 5

of 6

GEOLOGIST MARION DRAINTOOELE ARMY DEPOT  
NORTH AREADATE 7-2-92

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)		FID/FID READING OR COMMENT
40-41.5	50	CL	2.5YR	45	25	20	62	40	SL. MOIST, DARK YELLOWISH BROWN DENSE CLAYED GRASS w/ SAND, GRAVEL, FINE, SUB-ANGULAR, SAND VERY FINE TO COARSE SUB-ANGULAR TO SUB-ROUND. FINES, MOD PLASTIC, MOD STIFF.		1127 REFUSE 6" REMARK
								41			
								42			
								43	COBBLES FROM 4-6" CONCRETE UP IN THE CYCLONE.		
								44			
								45	Slightly moist brown, dense, poorly graded gr. with silt and sand. Gr: fine, subang to subrounded		1127 REFUSE 6" REMARK
45-46.5	50	CL	2.5YR	45	25	20	62	46	silty to coarse subangular to sub- round. no plasticity or stiffness		6" REMARK 6"-SUB
								47			
								48			
								49			

PROJECT NO. 2042.0120



JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST MORETON/ORTON  
DATE 7.12.42

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No.

53-DR-280  
Boring No.

Page 16  
of 10

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	FIELD READING OR COMMENT
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)			
50 -	110	6/10	10Y/1	45-50	30	25	60-65	50				
	50											
51.5								1				
								2				
								3				
								4				
55	39	10Y/1	10Y/1	0	15	85	110-115	55				
	45							6				
50								7				
								8				
								9				

PROJECT NO. 2842.0120



H Transition

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No.

SEAL  
Boring No.

Page 3

of 6

GEOLOGIST MASTON / RAAH

TOOELE ARMY DEPOT  
NORTH AREA

DATE 7.22.92

							WATER LEVEL	TIME	DATE		
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT	
60		CL	10YR 5/1	0	15	85	CL	0	Slightly moist, yellowish brown. Stiff and plastic. lean to fat clay with sand. 1/2 sand, subangular to subrounded	Ø	18" recover
↓	12							1			
↓	26										
61.5	40										
								2			
								3			
								4			
								5			
65	17	CL	10YR 5/1	0	15	85	CL	6.5	Slightly moist, yellowish brown, med. stiff, med. plastic. lean clay with sand. 1/2 to fine subangular to subrounded sand	Ø	18" recover
↓	21							6			
↓	27							7			
66.5								8			
								9			

Slightly moist, yellowish brown. Stiff and  
plastic, lean to fat clay with sand.  
Vfi sand, subangular to subrounded

18" recover

Slightly moist, yellowish brown, mod. stiff;  
mod. plastic, lean clay with sand.  
Vfi to fine subangular to subrounded  
sand

18" recover

PROJECT NO. 2942.0120

1520





GEOLOGIST MORETAN/DRAM  
DATE 7.22.92

**TOOELE ARMY DEPOT  
NORTH AREA**

**5546**

Page 5  
of 1

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/FID READING OR COMMENT
80								0				fine to coarse gravel, subangular to subrounded. v. little f. grain matrix present. cobbles up to 4" in c. lens littles - limestone gravel - grey	20.5' recovery
13	6w	25%		95	5%			1					
50								2				large (6") cobbles in c. lens	much difficulty drilling to 85'
81.5								3					
								4					
85								5				fine to coarse gravel, subangular to subrounded. limestone	25' recovery
17	6w	25%		95	5%			6					
50								7					
86.5								8					
								9				large cobbles in c. lens	

**PROJECT NO. 2942.0120**



JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST ANATOL LADEN  
DATE 7.22.92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No.

35-25-100  
Boring No.

Page 10  
of 10

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
90	27		3.5	10	25		GW	90				A.A. - Limestone	Ø
	50							1					2.5'
91.5													Barry
								2					
								3					
								4					
95							GW	95				As above	
								6					
96.5								7					
								8					
								9					
100	50		10Y 4	10	35	55	GW	100				1270004 CHANOT @ 100'	Ø
101.5								101				Slightly moist, dark yellowish brown, poorly sorted, low to med. plasticity, low to med. density, gravel subangular to subrounded.	.25'
								101.5				7 ft to coarse subangular to subrounded sand	

PROJECT NO. 200-0120

# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

Boring No. 76  
 Boring No. 76-76-1  
 Page 1  
 of 1

## **LOCATION of Soil Borings**

Foot N.S. \_\_\_\_\_  
 Foot E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

240° to S.S. #1  
 340° to S.S. #3  
 Located in grid #1 (see location map)



LOG SHEET NUMBER (Borepage no.) 1  
 GEOLOGIST B. H. Montgomery / F. M. Mendenhall  
 DATE 6/23/92  
 DRILLING CONTRACTOR Overland Drilling  
 DRILL RIG GME 750  
 BORING DIAMETER 2 1/2"  
 TYPE OF SAMPLE SPT

FLUID LEVEL		DATE STARTED
TIME	1000	6/23/92
DATE	6/23/92	DATE FINISHED
HOLE DEPTH	3 ft	6/23/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MARBELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-1'	10							0	Same as below	
	12							1	DETAILED MOST, BLAND, LOOSE, SILTY SAND	
1-3'	8	SM	10K 5	5-10	50	35-40	SM	2	SAND - FINE to COARSE, SUB-ADHESIVE	
	13							3	SUB-SAND, LOOSE, FINE to COARSE, SUB-ADHESIVE	
	12							4	to SUB-SAND	
	21							5		
								6		
								7		
								8		
								9		



SS = sandy silt  
 SS = sandy silt

\* Lithologic description from 1-3 ft same as 0-1 ft which was used as in sampling.



TEAD-N PHASE I RFI

PROJECT NO. 2042.0120

# SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

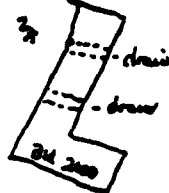
SWML No. 26  
 Boring No. 513-26-057  
 Page 1  
 Of 1

## LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

33° to S.S. #3  
 355° to S.S. #4  
 Located in grid #4 (see location map) 3

N1



LOG SHEET NUMBER (Borepage no.) 1

GEOLOGIST B. Holden / F. Morgan

DATE 6/23/92

DRILLING CONTRACTOR Oakland Drilling

DRILL RIG CMR 750

BORING DIAMETER 0-3' = 2 1/2"

TYPE OF SAMPLE SPT

FLUID LEVEL			DATE STARTED
TIME	0930		6/23/92
DATE	6/23/92		DATE FINISHED
HOLE DEPTH	3'		6/23/92

SAMPLE INTERVALS	BLOWS PER IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-1'	11							0	SAME AS BELOW	Obs
	17									
1-3'	23	SM	10YR 2/3	15	25-40	35-40	SM	1	DRY, PALE BROWN, LOOSE, SILTY SAND	Obs
	25							2	W/ GRAVEL, SAND FINE TO COARSE, SUB-ANGULAR TO SUB-ROUND, GRAVEL FINE TO COARSE, SUB-ANGULAR TO SUB-ROUND	
	28							3		
	32							4		
								5		
								6		
								7		
								8		
								9		

PROJECT NO. 2942.0120

**JME**

w/ = WITH  
 S.S. = SURVEY STAKE

+ Lithologic description from 1-3' due to 0-1' Lt being used up in sample collection. w/ is same material.



TEAD-N PHASE I RFI



# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Project No. 26  
 Boring No. 26-26-001  
 Page 1  
 of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

33° to S.S. #4  
 215° to S.S. #1

Located in grid #10 (see location map)

LOG SHEET NUMBER (Borepage no.) 1

GEOLOGIST B. Hildner / E. Marston

DATE 6/23/92

DRILLING CONTRACTOR Overland Drilling

DRILL RIG CME 750

BORING DIAMETER 2 1/2"

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL		DATE STARTED
TIME	11:10	6/23/92
DATE	6/23/92	DATE FINISHED
HOLE DEPTH	3'	6/23/92

SAMPLE INTERVALS	BLOWS PER IN	USCS SYMBOL	MINNELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-1'	8						ML	0	Same as below +	
	14							1	Dr. Dark Grained Sandy Low Plasticity	
1-3'	14	ML	10YR 4/2	20	20	55-60		2	Low strength low stiffness, sandy silt	
	12							3	W/ layer: sand - fine to medium	
	10						TB = 3'	4	sub-sand. (silt) - fine to coarse	
	9							5	sub-sand.	
								6		
								7		
								8		
								9		

S.S. - survey stake  
 w/o water

† Lithologic description same for 0-1' as 1-3' but was used up in sampling.



TEAD-N PHASE I RFI

PROJECT NO. 2042.0120

# SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 26  
 Boring No. 26-26-004  
 Page 1  
 of 1

## LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Plat. \_\_\_\_\_

150° to S.S. #2

173° to S.S. #2 corner of lot corner  
 (see location map). Located in  
 grid at 5, west of camp metal pile.

25.5° to 26-3

LOG SHEET NUMBER (Borepage no.) \_\_\_\_\_

GEOLOGIST B. Haidaway / F. Haidaway

DATE 6/23/92

DRILLING CONTRACTOR Overland Drilling

DRILL RIG CME 750

BORING DIAMETER 2 1/2"

TYPE OF SAMPLE SPT

FLUID LEVEL				DATE STARTED
TIME	12:00			6/23/92
DATE	6/23/92			DATE FINISHED
HOLE DEPTH	3'			6/23/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-1'	17							0	SAME AS BELOW	0.00
	20							1	SL. MIST, DARK BROWN, LOW PLASTICITY	0.00
1-3'	12	ML	10YR 3/4	45	25	65-70		2	LOW STIPPLES, SILT W/ SAND; SAND	
	12							3	VERY FINE TO FINE, S.S. - ROUNDED	
	10							4		
								5		
								6		
								7		
								8		
								9		

PROJECT NO. 2942.0120



ML = medium  
 SL = silty  
 S.S. = survey station

60° south east

Lithologic description from 1-3' due  
 to 0-1' is being used up in sample  
 collection - same material.



TEAD-N PHASE I RFI

# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

Boring No. 26  
 Boring No. 75-26-0  
 Page 1  
 of 1

## **LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

245.5° to S.S. #2  
~~245.5° to S.S. #2~~

Located in grid 6 next to fence.  
 Talked to worker - has possible PCB contamination. (See location map)

46° to 26-10

LOG SHEET NUMBER (Borepage no.) 1

GEOLOGIST B. Holden / E. Martin

DATE 6/23/92

DRILLING CONTRACTOR overland Drilling

DRILL RIG CME 750

BORING DIAMETER 2 1/2"

TYPE OF SAMPLE 9PT

FLUID LEVEL			DATE STARTED
TIME	<u>13:15</u>		<u>6/23/92</u>
DATE	<u>6/23/92</u>		DATE FINISHED
HOLE DEPTH	<u>3 ft</u>		<u>6/23/92</u>

SAMPLE INTERVALS	BLOWS PER IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	RDPID READING OR COMMENT
0-1'	12							0	<u>SOME AS ALLUUV</u>	<u>0.00</u>
	16							1	<u>SL. MUD, DARK GRAYISH BROWN, LOW</u>	<u>0</u>
1-3'	12	<u>ML-SM</u>	<u>10YR 5/2</u>	<u>45</u>	<u>50</u>	<u>5%</u>	<u>ML-SM</u>	1	<u>PLASTICITY, LOW STIFFNESS, LOOSE,</u>	<u>0.00</u>
	13							2	<u>SILTY SAND; SAND - VERY FINE TO MEDIUM</u>	<u>0.00</u>
	21							3	<u>SUB-AQUICL.</u>	
	42							4		
								5		
								6		
								7		
								8		
								9		

S.L. = slightly  
 S.S. = south east  
 S.S. = survey stake

\* Lithologic description for 0-1' same as 1-3' but was used up in sampling.

TEAD-N PHASE I RFI

PROJECT NO. 2042.0120

# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

SWMU No. 26  
 Boring No. S15-26-006  
 Page 1  
 of 1

## **LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_  
 164° to S.S. #10  
 318° to S.S. #4  
 Located in grid #14

LOG SHEET NUMBER (Borepage no.) 1

GEOLOGIST B. Huchanay / F. Menden

DATE 6/23/92

DRILLING CONTRACTOR Oxerland Drilling

DRILL RIG CME 750

BORING DIAMETER 2 1/2"

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL		DATE STARTED
TIME	<u>14:00</u>	<u>6/23/92</u>
DATE	<u>6/23/92</u>	DATE FINISHED
HOLE DEPTH	<u>5'</u>	<u>6/23/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-1'	14							0	SAME AS BELOW #	
	20							1	SL. MIST, DARK BROWN GRAY, LOW PLASTICITY, LOW STIPPLES, SANDY SILT	
1-5'	25	ML	10YR 4/3	15-20	20	65	ML	2	W/ GRAVEL; SAND - V. FINE to FINE, SUB-ANGULAR to SUB-ROUND, GRAVEL	
	24							3	FINE to COARSE, SUB-ROUND	
	60							4		
	25							5		
								6		
								7		
								8		
								9		

SL = slightly  
 w = with  
 S.S. = survey station  
 v. = very

TEAD-N PHASE I RFI

\*Lithology description from 1-3' same as material 0-1' which was used up in sampling void.

PROJECT NO. 2842.0120

# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

Borehole No. 26  
 Boring No. SB-26-01  
 Page 1  
 of 1

## **LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Plat. \_\_\_\_\_

125' to #10  
 110' to #13  
 located in grid #13.

LOG SHEET NUMBER (Bore/page no.) \_\_\_\_\_  
 GEOLOGIST S. Haidaway / F. Montem  
 DATE 6/23/92  
 DRILLING CONTRACTOR Overland Drilling  
 DRILL RIG CME 750  
 BORING DIAMETER 2.5"  
 TYPE OF SAMPLE SPT

FLUID LEVEL		DATE STARTED
TIME	15:00	6/23/92
DATE	6/23/92	DATE FINISHED
HOLE DEPTH	3'	6/23/92

SAMPLE INTERVALS	BLOWS PER IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/FID READING OR COMMENT
0-1'	15							0	same as Borehole	Fid out
	15							1		
1-3'	15	ML	10YR 4/2	20	20	60	ML	2	Dry, Dark grayish brown, low plasticity, low stiffness; sandy silt w/ gravel;	
	20							3	sand-very fine to fine, sub-round to round. Gravel - fine to large, sub-round.	
	14							4		
	13							5		
								6		
								7		
								8		
								9		

w/ = with  
 S.S. = survey stake

\* Lithologic description from 1-3' due to 0-1' being used for vca sampling. Same material.

PROJECT NO. 2942.0120



TEAD-N PHASE I RFI

26  
 Serial No. SB-26-008  
 Page 1  
 of 1

## LOG SHEET NUMBER (Bore/page no.) \_\_\_\_\_

**GEOLOGIST** B. Halderman / E. Moxton

DATE 6/24/42

**DRILLING CONTRACTOR** Overland Drilling

DRILL RIG CME 750

**BORING DIAMETER** 2.5"

TYPE OF SAMPLE SPT SAMPLE

FLUID LEVEL				DATE STARTED
-------------	--	--	--	--------------

TIME	0825			6/24/92
------	------	--	--	---------

DATE	6/24/92			DATE FINISHED
------	---------	--	--	---------------

HOLE DEPTH	3'			6/24/92
------------	----	--	--	---------

[illegible]

# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

DRAWING No. 26  
 Boring No. 33-26-  
 Page 1  
 of 1

## **LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

212° to S.S. #2

242° to S.S. #3

Locate in grid # 29

LOG SHEET NUMBER (Borepage no.) 1  
 GEOLOGIST B.K. Holdaway / F.P. Masten  
 DATE 6/24/92  
 DRILLING CONTRACTOR Overland Drilling  
 DRILL RIG CME 750  
 BORING DIAMETER 2 1/2"  
 TYPE OF SAMPLE SPT SAMPLE

FLUID LEVEL		DATE STARTED
TIME	<u>0930</u>	<u>6/24/92</u>
DATE	<u>6/24/92</u>	DATE FINISHED
HOLE DEPTH	<u>3'</u>	<u>6/24/92</u>

SAMPLE INTERVALS	BLOWS PER IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-1'	19							0	<u>Soil to surface</u>	
	12									
1-3'	6	CH	10YR 4/2	0	15	85	CH	1	<u>Dry, Pale Brown, High PLASTICITY, clay</u>	
	11							2	<u>stiffer, high dry strength, Fat clay;</u>	
	17							3	<u>sand - v. fine to fine, sub-round</u>	
	21							4	<u>To Round.</u>	
								5		
								6		
								7		
								8		
								9		

V. 2 very

\* Lithologic description from 1-3 ft also applies to 0-1' which was used up for sampling vials.

PROJECT NO. 2942.0120



TEAD-N PHASE I RFI

# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

SWMU No. 36  
 Boring No. SB-26-C18  
 Page 1  
 of 1

**LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ret. \_\_\_\_\_


~~188° to NW corner of~~  
~~old road Blot~~  
 207° to S.S. ~~26-2~~  
 337° to S.S. 26-5

LOG SHEET NUMBER (Borepage no.) 1  
 GEOLOGIST B. Holdeman / J. Norton  
 DATE 6/24/92  
 DRILLING CONTRACTOR Overland Drilling  
 DRILL RIG CME 750  
 BORING DIAMETER 2 1/2"  
 TYPE OF SAMPLE SPT SAMPLER


FLUID LEVEL				DATE STARTED
TIME	10:25			6/24/92
DATE	6/24/92			DATE FINISHED
HOLE DEPTH	3'			6/24/92

SAMPLE INTERVAL	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/FID READING OR COMMENT
0-1'	16							0	SAME AS BELOW	0.00
	16									
1-2'	16	SM	10YR 4/3	30	30	35-40	SM	1	DRY, DME BROWN, NO PLASTICITY OR	0.00
	90							2	STIFFNESS, DENSE to VERY DENSE,	
	92								SILTY SAND w/ GRAVEL; SAND - FINE	
	150							3	to COARSE, SUB-ANGULAR to SUB-ROUND.	0.00
							TO = 3'		GRAVEL - FINE to COARSE, SUB-ANGULAR	
								4	TO SUB-ROUND.	
								5		
								6		
								7		
								8		
								9		

PROJECT NO. 2942.0120

 w/ - with  
 S.S. & survey stake

\* 0-1' used in sampling vials - is same as 1-3'

 **TEAD-N PHASE I RFI**



# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Boring No. 26  
 Boring No. 53-26-01  
 Page 1  
 of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

350' to 26-5'

56' to 26-8'

locate in grid & 31.

LOG SHEET NUMBER (Borepage no.) 1

GEOLOGIST B. W. H. / F. H. H.

DATE 6/24/92

DRILLING CONTRACTOR Overland Drilling

DRILL RIG CME 750

BORING DIAMETER 2 1/2"

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL		DATE STARTED
TIME	<u>11:25</u>	<u>6/24/92</u>
DATE	<u>6/24/92</u>	DATE FINISHED
HOLE DEPTH	<u>5'</u>	<u>6/24/92</u>

SAMPLE INTERVALS	BLOWS PER IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-1'	5							0	Same as below *	
	7							1		
1-3'	4	ML	10YR 2.5	<5	35	60	ML	2	SL MUST TO BE, VERY DARK BROWN, LOW PLASTICITY, LOW STRENGTH, SANDY SILT; SAND - VERY FINE TO FINE, SUB-	
	4							3	ANGULAR TO SUB-ANGULAR.	
	5							4		
	5							5		
								6		
								7		
								8		
								9		

SL = slightly

\* 0-1' used up on sampling rate but same material as 1-3'

PROJECT NO. 2942.0120



TEAD-N PHASE I RFI

# SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 26  
 Boring No. SB-76-012  
 Page 1  
01

## LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

234° to 26-4  
 207° to 26-3  
 Locate in grid 32

*Handwritten sketch of a location grid with a point marked '32' and a north arrow pointing towards the top right.*

LOG SHEET NUMBER (Borepage no.) 1  
 GEOLOGIST B. Holdaway / F. Masten  
 DATE 6/24/92  
 DRILLING CONTRACTOR Overland Drilling  
 DRILL RIG CME 750  
 BORING DIAMETER 2.5"  
 TYPE OF SAMPLE SPT

FLUID LEVEL		DATE STARTED	
TIME	<u>12:15</u> <u>12:45</u>	DATE FINISHED	<u>6/24/92</u>
DATE	<u>6/24/92</u>		
HOLE DEPTH	<u>3'</u>		<u>6/24/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-1'	6							0	Same as below	OK
	8							1	SL. MIST, VERY DARK GRAY TO BLACK	OK
1-3'	5	ML	10YR 2/2	45	35	60	ML	2	LOW PLASTICITY, LOW STIFFNESS, SANDY	
	7							3	SILT: SAND-VERY FINE to FINE, S.S. -	
	8							4	Angular	
25								5		
								6		
								7		
								8		
								9		

SL - slightly

\* 0-1' used up in sampling tests. Same material as from 1-3'

PROJECT NO. 2942.0120

 JMM



TEAD-N PHASE I RPI

# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SOIL No. 26  
 Boring No. SB 26  
 Page 1  
 of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

91° to S.S. #8  
 235° to S.S. #4  
 Located in grid #44

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST B. Holdaway / F. Mardon

DATE 6/24/92

DRILLING CONTRACTOR Overland Drilling

DRILL RIG CME 750

BORING DIAMETER 2 1/2"

TYPE OF SAMPLE SPT SAMPLE

FLUID LEVEL			DATE STARTED
TIME	13:05		6/24/92
DATE	6/24/92		DATE FINISHED
HOLE DEPTH	3' 4"		6/24/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MINSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-1'	15							0	Same as below	FOOT
	8									
1-3'	6	SM	10YR 4/5	55	45	0	SM	1	Dry to sil. moist, dark grayish brown,	
	5							2	no plasticity or stiffness, loose,	
	5							3	silty sand; sand - v. fine to fine,	
	6							4	sub-angular	
							TD 3'	5		
								6		
								7		
								8		
								9		

SL = slightly  
 V. = very

\* Lithologic description from 1-3' due to sampler 0-1' which was used in sampling data



TEAD-N PHASE I RFI

PROJECT NO. 2042.0120

# SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 26

Boring No.  
SB 26 014

Page 1  
Of 1

## LOCATION of Soil Borings

Foot N.S. \_\_\_\_\_  
Foot E.W. \_\_\_\_\_  
of Survey Ret. \_\_\_\_\_

214° to S.S. #4

170° to S.S. #3

located in grid #6

LOG SHEET NUMBER (Borepage no.) 1

GEOLOGIST B. Hildaway / E. Montan

DATE 6/24/92

DRILLING CONTRACTOR Overland Drilling

DRILL RIG CME 750

BORING DIAMETER 2.5"

TYPE OF SAMPLE SPT SAMPLE

FLUID LEVEL		DATE STARTED	
TIME		<u>6/24/92</u>	
DATE	<u>6/24/92</u>	DATE FINISHED	
HOLE DEPTH	<u>34</u>		<u>6/24/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-1'	10							0	Same as below	FD MT
	15							1		
1-3'	26	ML	10YR 3/4	20	25	55	ML	2	DRY, DARK BROWN, LOW to moderate PLASTICITY, LOW STRENGTH, SANDY SILT w/ GRAVEL; SAND - V. FINE to COARSE, ANGULAR to sub-round	
	13							3	GRAVEL - FINE to COARSE, sub-round	
	11							4		
	11							5		
								6		
								7		
								8		
								9		



w/ 2 north  
S.S. survey stake

\* 0-1' used up in sandstone core  
same as 1-2'



TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

DRAWING NO. 26  
 Boring No. SB-26-C  
 Page 1  
 of 1

## **LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Plat. \_\_\_\_\_

140' to s.s. stake #3

249' to s.s. stake #4

Located in grid #8  
 west of old 2025

LOG SHEET NUMBER (Borepage no.) 1

GEOLOGIST B. Holdaway / E. Marston

DATE 6/24/92

DRILLING CONTRACTOR Overland Drilling

DRILL RIG CME 750

BORING DIAMETER 2.5"

TYPE OF SAMPLE SPT

FLUID LEVEL		DATE STARTED
TIME	1440	6/24/92
DATE	6/24/92	DATE FINISHED
HOLE DEPTH	3'	6/24/92

SAMPLE INTERVAL	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	SPT READING OR COMMENT
0-1'	16						SM	0	Same as below	For out
	14							1		
1-3'	9	SM	10YR 2	20	40	40	TO=3	2	deep dark grayish brown, low plasticity, low stiffness, silty sand & gravel; sand very fine to fine, sub-round	
	8							3	Gravel - fine to coarse, sub-angular to sub-round.	
	11							4		
	38							5		
								6		
								7		
								8		
								9		

S.S. = survey stake

\* 0-1' used up in sampling vials - same material as 1-3'

TEAD-N PHASE I RFI

PROJECT NO. 2042.0120

# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

SWMU No. 29  
 Boring No. SB029001  
 Page 1 of 1

## **LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. 28-1

Sample Location 42'N, 75'E  
 of SW corner of grid 1



LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST BAD

DATE 6/11/92

DRILLING CONTRACTOR OVERLAND RESIDENT

DRILL RIG CAR-PSD

BORING DIAMETER 4"

TYPE OF SAMPLE 5' CONTINUOUS SAMPLE

FLUID LEVEL				DATE STARTED
TIME				<u>6/11/92</u>
DATE	<u>6/11/92</u>			DATE FINISHED
HOLE DEPTH	<u>5'</u>			<u>6/11/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/FID READING OR COMMENT
0-2		CL	10YR 7.5	20	10	65		0	dry v. dark gray silty br. moderate plastic	NA Equip.
								1	to plastic, med. stiff to stiff, gravelly lean clay / Fine to	moderate
								2	coarse granular very fine to coarse sand - sub angular, trace	
								3	No recovery > 2'	
								4		
								5		
								6		
								7		
								8		
								9		

br = brown      med. = moderately  
 v = very      NA = Not available  
 dk = dark

TEAD-N PHASE I RFI

PROJECT NO. 42.0120

**SOIL BORING LOG**  
**JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

SRMU No. 29  
 Boring No. 2824002  
 Page 1  
 of 1

**LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

337° TO SURVEY STAKE  
28-1.

143° TO STAKE CPM4

LOG SHEET NUMBER (Bore/page no.) 1  
 GEOLOGIST GRM HOLDWAY / F. MORTON / B. DICKIN  
 DATE 6/11/92  
 DRILLING CONTRACTOR OVERLAND DRILLING  
 DRILL RIG CME-750  
 BORING DIAMETER 4"  
 TYPE OF SAMPLE 5' CONTINUOUS SAMPLER

FLUID LEVEL			DATE STARTED
TIME	<u>+530 AM</u>		<u>6/11/92</u>
DATE			DATE FINISHED
HOLE DEPTH	<u>24.5'</u>		<u>6/11/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIDPID READING OR COMMENT
0-2'		CL	10YR 5/2	5	20	70		0	DRY, VERY DARK GRAY-BROWN, MODERATELY PLASTIC	NA
								1	TO PLASTIC, MODERATELY STIFF	1' RECORDED
								2	TO STIFF, SANDY LEAN CLAY	END 1ST ATTEMPT
								3	SAND FINE TO COARSE, SUB-ANGULAR GRAVEL FINE TO COBBLES, SUB-ROUND.	2ND ATTEMPT
								4	POOR RECOVERY	GOES TO 4.5'
								5		LESS THAN 6" RECOVERY
								6		SEVERAL LARGE COBBLES IN SAND, 2"
								7		SUPPLEMENT ABOUT FOR SAMPLING
								8		
								9		

NA = NOT AVAILABLE, OVERLAP



TEAD-N PHASE I RFI

PROJECT NO. 2842.0120

# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29  
 Boring No. SB 029 002  
 Page 1  
 of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

345° TO STAKE 28-1  
 69° TO STAKE CP#4

LOG SHEET NUMBER (Bore/page no.) 1  
 GEOLOGIST R. HOLMWAY / F. MORETON  
 DATE 6/12/92  
 DRILLING CONTRACTOR OVERLAND DRILLING  
 DRILL RIG CME-750  
 BORING DIAMETER 0-2' = 2 1/2" 3-5' = 2"  
 TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL		DATE STARTED
TIME		<u>6/12/92</u>
DATE	<u>6/12</u>	DATE FINISHED
HOLE DEPTH	<u>5'</u>	<u>6/12/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-2'	10	ML	10YR 2.5/10	5	10	85		0	DRY, VERY DARK GRAYISH BROWN, LOW TO MODERATE PLASTICITY, LOW STIFFNESS, SILT WITH SAND.	0 mm
	17							1	SAND FINE TO COARSE, SUB ROUNDED.	
	32							2	GRAIN SUB ROUNDED. FINE TO MED. COARSE GRAIN.	
	37							3	FROM 2'-3'	
3-5'	8	SM	10YR 2.5/10	10	60	30		4	DRY, LIGHT YELLOWISH BROWN, SILTY SAND, FINE TO VERY COARSE, LOOSE TO MED. DENSE	
	14							5	ANGULAR TO SUB ROUNDED	
	20							6		
	35							7		
								8		
								9		

PROJECT NO. 2 0120



TEAD-N PHASE I RFI



# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

DRAWING No. 29  
 Project No. 5502001  
 Page 1  
 of 1

## **LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

325° TO STAKE 28-1  
 SW CORNER OF SQUARE  
 147° TO STAKE CP4

LOG SHEET NUMBER (Bore/page no.) 1  
 GEOLOGIST B. HOLDAVITY / F. MORETON  
 DATE 6/11/92  
 DRILLING CONTRACTOR OWALLAND DRILLING  
 DRILL RIG CME-750  
 BORING DIAMETER 4"  
 TYPE OF SAMPLE 5' CONTINUOUS SAMPLER

FLUID LEVEL				DATE STARTED
TIME				<u>6/11/92</u>
DATE	<u>6/11/92</u>			DATE FINISHED
HOLE DEPTH	<u>4.5'</u>			<u>6/11/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/FID READING OR COMMENT
0-4.5	25-30	GM-2	10YR 2/1	25	60	15		0	DRY, VERY DARK GRAYISH BROWN, NON PLASTIC, NON STIFF, SLIGHTLY COHESIVE, CLAYEY SAND, SILTY SAND	DRIVE SAMPLE 4.5' ONLY
								1	SAND, FINE TO COARSE, SUB-ANGULAR TO SUB-ROUND	.5' RECOVERED
								2		LARGE CL
								3		IN SMC.
								4		0.1"
								5		
								6		
								7		
								8		
								9		

PROJECT NO. 2942.0120



TEAD-N PHASE I RFI

# SOIL BORING LOG

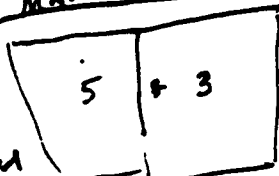
JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29  
 Boring No. SB 021005  
 Page 1  
 of 1

## LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ret. \_\_\_\_\_

*MAINT. - 1500' Rd.*



*3550 TO STAKE 284  
 82° TO STAKE CP-4*

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST B. HODGWAY / F. MORETH

DATE 6/11/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG CME-750

BORING DIAMETER 4"

TYPE OF SAMPLE 5' CONTINUOUS SAMPLER

FLUID LEVEL		DATE STARTED	
TIME			<u>6/11/92</u>
DATE	<u>6/11/92</u>	DATE FINISHED	
HOLE DEPTH	<u>4.5'</u>		<u>6/11/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/FID READING OR COMMENT
0-4.5		CL-MH	10YR 3/2	25	15	60		0	dry, v. dark grayish brown, MODERATE PLASTIC, LOW TO MODERATE STIFFNESS	DRIVE SAMPLER 4.5' ITAD ONLY 2'
								1	Gravelly silt w/ sand	RECOVERY
								2	Gravel round to sub round, v fine to coarse sand, sub round to sub angular	0 ppm
								3		
								4		
								5		
								6		
								7		
								8		
								9		

PROJECT NO. 2.0120



TEAD-N PHASE I RFI

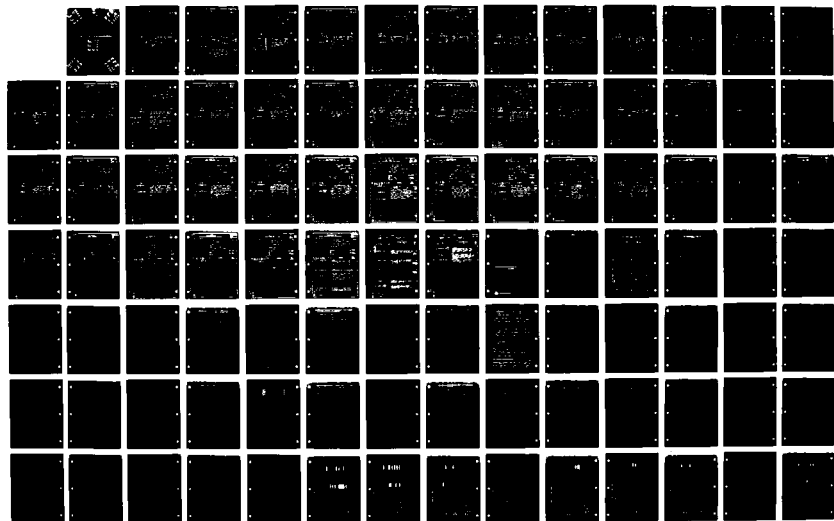
AD-A282 574

TOOELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SINUS  
VOLUME 2 APPRENDICES A - J REVISION(U) MONTGOMERY  
WATSON WALNUT CREEK CA DEC 93 XA-USAEC  
DAAA15-90-D-0011

4715

UNCLASSIFIED

NL



Association for Information and Image Management

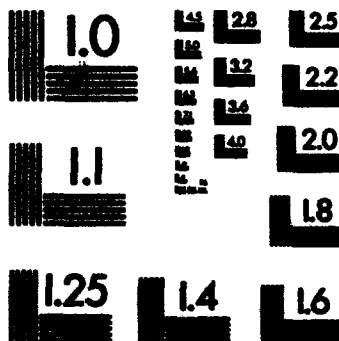
1100 Wayne Avenue, Suite 1100  
Silver Spring, Maryland 20910

301/587-8202

Centimeter



Inches



MANUFACTURED TO AIM STANDARDS  
BY APPLIED IMAGE, INC.

SWMU No. 29  
Bonding No. SB-029-00  
Page 1  
Of 1

Feet N.S. \_\_\_\_\_  
Feet E.W. \_\_\_\_\_  
of Survey Ret. \_\_\_\_\_

277° to wind sock on  
BLDG 576.

LOG SHEET NUMBER (Bore/page no.) \_\_\_\_\_  
GEOLOGIST B. HOLCOMBY / F. MCGETTON  
DATE 6/15/92  
DRILLING CONTRACTOR OVERLAND DRILLING  
DRILL RIG \_\_\_\_\_  
BORING DIAMETER 0-4'-2" 4-5' = 1.875"  
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	1145			6/15/92
DATE	6-15			DATE FINISHED
HOLE DEPTH	5'			6/15/92

[illegible]

June 52 E 5650-1127  
A.E. - 01 above



## TEAD-N PHASE I RF1

**PROJECT NO. 2942.0120**

# SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Borehole No. 29  
 Boring No. SB 629 01  
 Page 1  
 of 1

## LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

188° TO WIND SALK ON  
 SOUTH CENTER OF BLOCK 576

209° TO STATE SW 29-3.  
 (TELEPHONE POLE SOUTH  
 END OF PARKING LOT)

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST R. HOLDAWAY / F. MORETON

DATE 6/12/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG CME-70

BORING DIAMETER 0-2' = 2 1/2" 3-5' = 2 1/2"

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL		DATE STARTED
TIME		<u>6/12/92</u>
DATE	<u>6/12/92</u>	DATE FINISHED
HOLE DEPTH	<u>4 1/2'</u>	<u>6/12/92</u>

SAMPLE INTERVALS	BLOWS PER IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-2'	13	SM	10YR 2/2	25	45	30		0	DRY, DARK GRAY-BROWN, NO PLASTICITY, NO STIFFNESS	0-1' THEN REFUSAL
	32							1	MEDIUM SILTY SAND WITH GRAVEL, MEDIUM DENSE, SUB ANGULAR TO SUB ROUND	~4" RECOVERY NO SAMPLES FOR ANALYSIS
25-45	20							2	FINE TO VERY COARSE GRAVEL	
	40							3		
	39	SM	10YR 2/2	25	40	35		4	MOST, PALE BROWN, NO PLASTICITY, NO STIFFNESS	PROVE FROM 2.5' TO 4.5'
	60							5	SILTY SAND WITH GRAVEL, DENSE TO VERY DENSE, FINE TO VERY COARSE, SUB ANGULAR TO ROUND. GRAVEL FINE TO COARSE, SUB ANGULAR TO SUB ROUND	THEN REFUSAL 2' RECOVERY
								6		
								7		
								8		
								9		

PROJECT NO. 2-0120



TEAD-N PHASE I RFI

Page 2  
of 1

TYPE OF SAMPLE SPT SAMPLE

of Survey Ret. \_\_\_\_\_

1800 TO WASH SOLK ON  
BLDG 576.

208° TO STAGE 29-3

HOLE DEPTH	5'			6/12/92
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## TEAD-N PHASE I RFI

**PROJECT NO.** 2942.0120

# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SURAJ No. 29  
 Boring No. SB 029  
 Page 1  
 of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

292° TO WIND SOCK ON  
 BLOT 576

242 1/2° TO STAKE 29-3  
 AT TERMINUS POLE.

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST R. HILGOMAY / F. MORENO

DATE 6/14/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG \_\_\_\_\_

BORING DIAMETER 0-4' = 2" 4-5' = 1.875"

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL	DATE STARTED
TIME <u>1150</u>	<u>6/14/92</u>
DATE <u>6/14</u>	DATE FINISHED
HOLE DEPTH <u>5'</u>	<u>6/14/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIDFID READING OR COMMENT
0-2'	14	AL	10YR 5/2	30	40	60		0	DRY, VERY DARK GRAYISH BROWN, LOW PLASTICITY, LOW STIFFNESS, HETEROGENEOUS SPT. GRAVEL, FINE TO COARSE AND TO SUB ANG. SAND VERY FINE TO COARSE, SUB ANGULAR TO SUB ROUND.	
	18							1		
	27							2		
	44							3		
2-4'	37	SM	10YR 5/2	40	40	20		4	slightly moist, pale brown, med. density, silty sand w/ gravel sand very fine - sub angular, gravel fine to coarse, sub-round (LS + at least gravel)	0 per
	44							5		
	47							6		
	44							7		
4-5'	41							8		
	34							9		

MOD. & MODERATELY  
 N/C WITH  
 LS & LAMINATIONS  
 TEAD-N PHASE I RFI

QTESTE: QUARTZITE





STWALJ No. 29  
Billing No. 82-019-007  
Page 1  
α 1

Feet N.S. \_\_\_\_\_  
Feet E.W. \_\_\_\_\_  
of Survey Ret. \_\_\_\_\_

298 TO STATE 29-1 ON  
SE CORNER OF BLDG.

230° to strike 29-3 at  
right hand pole

GEOLOGIST R. Houshory / F. Moreton

DATE 6/15/92

DRILLING CONTRACTOR OVERTLAND DRILLING

## DRILL RIG

BOHRING DIAMETER 0-4' = 2"      4-5' = 1.875

TYPE OF SAMPLE SPT SAMPLE

FLUID LEVEL				DATE STARTED
TIME	12:45			6/15/92
DATE	6-15			DATE FINISHED
HOLE DEPTH	51			6/15/92

[illegible]

$x = \frac{1}{2}y$

## TEAD-N PHASE I PFI

**PROJECT NO. 4-0120**

# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29  
 Boring No. SB 029  
 Page 1 of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

299° TO WIND SOIL  
 ON B206576.

236° TO STAKE 29-3  
 AT TELEPHONE POLE.

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST R. HOLDEN / F. MORETON

DATE 6/14/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG \_\_\_\_\_

BORING DIAMETER 0-4' = 2" 4-5' = 1.875"

TYPE OF SAMPLE SPT SAMPLE

FLUID LEVEL			DATE STARTED
TIME	<u>1245</u>		<u>6/14/92</u>
DATE	<u>6/14</u>		DATE FINISHED
HOLE DEPTH	<u>5'</u>		<u>6/14/92</u>

SAMPLE INTERVALS	BLOWS PER IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-2'	10	SA	10YR 5/6	25	40	35		0	dry, very dark grayish brown, loose, silty sand w/ gravel, sand very fine to coarse, fine to sub med, gravel fine to coarse, sub round.	0 pps
	14							1	slightly moist, brown, low plasticity, low stiffness.	0 pps
	11							2	silt w/ gravel, gravel to coarse size	
2-4'	2	ML	10YR 5/6	25	15	60		3	sub rounded, sand is fine sub-angular to sub round	
	12							4		
	18							5		
	18							6		
4-5'	16							7		
	13							8		
								9		

W/S WITH  
 sub = subangular  
 L.S. = loose stone  
 TEAD-N PHASE I RFI

V = very

# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

SWELL No. 29  
 Boring No. SB 029 013  
 Page 1  
 Of 1

**LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

165° TO WIND SOCK  
205° TO STAKE SN 29-3

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST B. HOLMWAY / F. MORTON

DATE 6/12/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG CAG-750

BORING DIAMETER 0-2' = 2 1/2" 3-5' = 2"

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL		DATE STARTED	
TIME			<u>6/12/92</u>
DATE	<u>6/12</u>	DATE FINISHED	
HOLE DEPTH	<u>5'</u>		<u>6/12/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIDPID READING OR COMMENT
0-2'	16	GM	10YR 6/1	40	30	30	gm	0	DRY, PALE BROWN	0.00
	24							1	NON PLASTIC, NON COHESIVE	
	18								SELTY GRAVEL WITH SAND	
	38							2	GRAVEL, 10-15mm PENE TO	
									COARSE, SUB ROUND TO	
								3	ROUND, MOD DENSE, SAND	
3-5'	13			40					PENE TO VERY COARSE,	0.00
	22						gm	4	SUB ANG TO SUB RD.	
	25	4	4	↓	↓	↓				
	32									
								5		
								6		
								7		
								8		
								9		

PROJECT NO. 2.0120



TEAD-N PHASE I RFI

# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB 0290

Page 1  
of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
Feet E.W. \_\_\_\_\_  
of Survey Ref. \_\_\_\_\_

145° TO WIND SOCK  
206° TO STAKE SN29-3  
(TELEPHONE POLE)

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST B. HOLDWAY / F. MORETON

DATE 6/12/92

DRILLING CONTRACTOR OVERLAND PROTECTIVE

DRILL RIG CME-350

BORING DIAMETER 0'-2' = 2 1/2" 3-5' 32"

TYPE OF SAMPLE SPT SAMPLES

FLUID LEVEL				DATE STARTED
TIME				<u>6/12/92</u>
DATE	<u>6/12</u>			DATE FINISHED
MOLE DEPTH	<u>5'</u>			<u>6/12/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIDFID READING OR COMMENT
0-2'	10	GM	10YR 8/2	50	26	24		0	SLIGHTLY MOIST, YELLOWISH BROWN, NON COHESIVE, MEDIUM DENSE TO DENSE, SILTY GRAVEL W/ SAND. VERY FINE TO VERY COARSE SUBANGULAR	0.112
	20							1		
	33							2		
	81							3		
3-5'	31	GM	10YR 8/2	40	30	30		4	SLIGHTLY MOIST, PALE BROWN. NON COHESIVE, Med. dense to dense. Silty gravel w/ sand. VERY FINE TO VERY COARSE SUBANGULAR	0.112
	41							5		
	43							6		
	55							7		
								8		
								9		

PROJECT NO. 2942.0120



TEAD-N PHASE I RFI

# SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWALL No. 29  
 Boring No. SB 029 015  
 Page 1  
 of 1

## LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

107° TO STATE SW 29-1  
 AT CORNER OF B.B. (SE corner)  
 194° TO STATE SW 29-3  
 AT TELEPHONE POLE.

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST B. HOLTHWAY / F. MORENO

DATE 6/12/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG CME-750

BORING DIAMETER 0-2' = 2 1/2" 3-5' = 2"

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME				<u>6/12/92</u>
DATE	<u>6/12</u>			DATE FINISHED
HOLE DEPTH	<u>5'</u>			<u>6/12/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIDP/ID READING OR COMMENT
0-2'	11	CL	2.5YR 5/6	35	15	50		0	SL. MOIST, DARK BROWN, LOW TO MODERATE PLASTICITY, LOW TO MODERATE STIFFNESS, GRAVELLY	0.00
	12						GM	1	MODERATE STIFFNESS, GRAVELLY	
	11							2	LEAN CLAY W/ SAND. GRAVEL FINE TO COARSE, SUB ROUND. SAND V. FINE TO COARSE - SUB ANGULAR + SUB ROUND	0.00
2-3'	4							3		
	3							4	SL. MOIST, VERY DARK GRAYISH BROWN, LOW TO MODERATE PLASTICITY, LOW TO MODERATE STIFFNESS, GRAVELLY LEAN CLAY WITH SAND. GRAVEL FINE TO COARSE, SUB ROUND. SAND V. FINE TO COARSE, SUB-ROUND + SUB-ANGULAR	
3-5'	11							5		
	28	CL	10YR 5/2	30	20	50	CL	6		
	24							7		
	25							8		
								9		

SL = slightly



TEAD-N PHASE I RFI

PROJECT NO. 20-2.0120

# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB 0290

Page 1 of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
Feet E.W. \_\_\_\_\_  
of Survey Ref. \_\_\_\_\_

94° TO WIND SOAK ON TOP  
OF BLDG 576

191° TO STAKE # 29-3 AT  
TELEPHONE POLE

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST B. HOLDWAY / F. MORETON

DATE 6/13/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG CASE-750

BORING DIAMETER 0-4' = 2" 4-5' = 1.875"

TYPE OF SAMPLE SPT SAMPLE

FLUID LEVEL				DATE STARTED
TIME				6/13/92
DATE	6/13			DATE FINISHED
HOLE DEPTH	5'			6/13/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIDPID READING OR COMMENT
0-2'	9	ML	10YR 2.5/2.5	25	60		ML	0	SL. SAND, VERY DARK BROWN, LOW TO MODERATE PLASTICITY, LOW STIFFNESS, SANDY SILT	0-5'
	7							1	W/ MANNER, SAND VERY FINE TO COARSE, SUB ANGULAR	
	7							2	SUB ROUND, MANNER, FINE TO COARSE, SUB ROUND	
2-3'	8	ML	10YR 2.5/2.5	50	80			3	PLASTICITY, LOW STIFFNESS, SILT, SAND IS NOT GRADED, V. FINE TO COARSE	
3-5'	20	S-SAND	10YR 2.5/2.5	60	50			4	SUBROUND, GRAVEL FINE TO COARSE - SUBROUND	
	50							5	SLIGHTLY COARSE, FINE GRAINED, DUE TO V. FINE, DUE TO V. FINE	
	106							6	POORLY GRADED SAND W/ SILT + GRAVEL, SAND IS V. FINE TO FINE COARSE, SUBROUND	
4-5'	88							7	GRAVEL FINE TO COARSE, SUBROUND TO SUB ANGULAR	
	57							8		
								9		

SL = Slightly



TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWHUJ No. 29

Boring No. SB 029 017

Page 1  
Of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
Feet E.W. \_\_\_\_\_  
of Survey Ref. \_\_\_\_\_

76° TO STAKE 29-1  
SE CORNER OF BLK 6

193° TO STAKE 29-3  
AT TELEPHONE POLE

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST B. HODGKINS / F. MORTON

DATE 6/12/92

DRILLING CONTRACTOR OVERLAND ORIENTAL

DRILL RIG CME-750

BORING DIAMETER 0-2' = 2 1/2" 3-5' = 2"

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL			DATE STARTED
TIME			6/12/92
DATE	6/12/92		DATE FINISHED
HOLE DEPTH	5'		6/12/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-2'	7	GM-25	2.5	25	40			0	SL. MEST, DARK BROWN, LOW PLASTICITY,	
	12							1	LOW STIFFNESS, SILTY GRAVEL W/ SAND.	
	18								GRAVEL, LOOSE, FINE TO COARSE,	
	26							2	SUB ROUND. SAND FINE TO VERY	
2-3'	7								COARSE, SUB ANGULAR TO SUB ROUND	
	13							3	As above	0 ppm
3-5'	14									
	14									
	10							4		
	16							5		
								6		
								7		
								8		
								9		

SL = Slightly



TEAD-N PHASE I RFI

PROJECT NO. 2942.0120



# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

SWMU No. 29  
 Boring No. SR 029  
 Page 1  
 Of 1

## **LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

15° TO W SAND SOIL ON  
BLDG 576

189° TO STAKE 29-3 AT  
TELEPHONE POLE

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST B. HOLMAN / F. MORETON

DATE 6/13/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG CME-700

BORING DIAMETER 0-4' = 2" 4-5' = 1.875"

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	<u>8:30</u>			<u>6/13/92</u>
DATE	<u>6/13</u>			DATE FINISHED
HOLE DEPTH	<u>5'</u>			<u>6/13/92</u>

SAMPLE INTERVALS	BLOWS PER IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	RDPD READING OR COMMENT
<u>1-2'</u>	<u>12</u>	<u>CL</u>	<u>7.5YR 5/2</u>	<u>20</u>	<u>50</u>	<u>15</u>		<u>0</u>	<u>SL. MUD, DARK BROWN, LOW TO MODERATE PLASTICITY</u>	
<u>2-3'</u>	<u>17</u>						<u>CL</u>	<u>1</u>	<u>LOW TO MOD. STIFFNESS, MOD. COHESIVENESS, GRAVELLY LOAM CLAY, GRAVEL FINE TO COARSE, SUB ROUND</u>	<u>0 ppm</u>
	<u>8</u>							<u>2</u>	<u>SL. MUD, DARK BROWN, LOW PLASTICITY, LOW STIFFNESS, SILTY GRAVEL</u>	
<u>3-4'</u>	<u>13</u>	<u>GM</u>	<u>2.5YR 5/2</u>	<u>30</u>	<u>30</u>	<u>40</u>	<u>GM</u>	<u>3</u>	<u>W/ SAND, VERY FINE, SUB ROUND, GRAVEL FINE TO COARSE SUBANGULAR</u>	<u>0 ppm</u>
	<u>19</u>							<u>4</u>		<u>0 ppm</u>
	<u>94</u>							<u>5</u>		
	<u>31</u>							<u>6</u>		
<u>4-5'</u>	<u>18</u>							<u>7</u>		
	<u>24</u>							<u>8</u>		
								<u>9</u>		

PROJECT NO. 2042.0120



TEAD-N PHASE I RFI

# SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWELL No. 29  
 Boring No. SB 029 019  
 Page 1  
 of 1

## LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

640 TO WIND SOCK ON  
 RIG 576

182° TO STAKE 29-3  
 AT TELEPHONE POLE

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST B. HOLDWAY / F. MORETON

DATE 6/13/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG CME-750

BORING DIAMETER 0-4" = 2" 4-5" = 1.875"

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL		DATE STARTED	
TIME	9:30	DATE FINISHED	6/13/92
DATE	6/13		
HOLE DEPTH	5 ft		6/13/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/FID READING OR COMMENT
0-2'	10	CL	7.5YR	20	30	60	CL	0	SL. MOIST, DARK BROWN, MOD PLASTICITY,	0 ppm
	10							1	MOD STIFFNESSES, SANDY LOAM CLAY w/	
	11								GRAVEL SAND VERY FINE TO COARSE, ANG. TO SUB ANG.,	
	13								GRAVEL, FINE TO COARSE, SUB ANG TO SUB ROUND	
2-4'	23	SM	7.5YR	20	40	30	SM	2	Light brown, well cohesive, dense,	0 ppm
	27							3	silty sand w/ gravel very fine	
	47								to fine sand, coarse gravel - approx	
3-4.5'	33							4	to sub angular, gravel, gte 1/4"	
4-5'	33									0 ppm
	33							5	bl. sh.	
								6		
								7		
								8		
								9		

qtzite = quartzite  
 SL = slightly moist  
 Ah = 1st horizon

TEAD-N PHASE I RFI

PROJECT NO. 2-2.0120

# SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29  
 Boring No. SB 029 0  
 Page 1  
 Of 1

## LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

131° TO WIND SOIL ON  
 TOP OF BLB 576

200° TO STAKE 29-3 AT  
 TELEPHONE POLE.

LOG SHEET NUMBER (Borepage no.) 1

GEOLOGIST R. HOLCOMB / F. MORETON

DATE 6/13/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG ME 750 0-35' = 2" 35-5' = 1.875"

BORING DIAMETER 0-4' = 2" 4-5' = 1.875"

TYPE OF SAMPLE SPT SAMPLE

FLUID LEVEL				DATE STARTED
TIME				6/13/92
DATE				DATE FINISHED
HOLE DEPTH				6/13/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIDPID READING OR COMMENT
0-3'	5	CL	10YR 2.5	15	35	60	CL	0	MOD. VERY DARK GRAYISH BROWN, MOD. PLASTIC, MOD. STIFFNESS, SANDY LOAM CLAY w/ GRAVEL, SAND	
	7							1	VERY FINE TO COARSE ANGULAR TO SUB-ANGULAR, FINE TO COARSE, SUB ANG TO SUB ROUND.	
2-3.5'	100	GM	10YR 2.5	20	10		GM	2	Slightly moist, grayish brown, very dense, well graded gravel w/ silt + sand, sand fine to coarse - subround, L to M, gravel fine to coarse - angular to subangular, gravel is quartz & L.S.	Open
	99							3	fine to cobbles, subangular.	
3.5-5'	66	GM	10YR 2.5	20	10			4		
4-5'	41							5		
	45							6		
								7		
								8		
								9		

qs = quartzite  
 Ls = lime stone  
 Mod = Moderate

TEAD-N PHASE I RFI

PROJECT NO. 2042.0120

Page 1  
Of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
Feet E.W. \_\_\_\_\_  
of Survey Ret. \_\_\_\_\_

02° TO STAKE 29-2 AT  
SE CORNER OF 646 576

36° TO WIND SOCK ON  
BLD 576.

LOG SHEET NUMBER (Bore/page no.)

GEOLOGIST B. MURPHY / F. MORETON

DATE 6/17/92

DRILLING CONTRACTOR OVERLAND DRILLING

## DRILL RIG

DRILL HIG \_\_\_\_\_  
BORING DIAMETER 0-4" = 2" 45' = 1.875"

TYPE OF SAMPLE SPT SAMPLER

**FLUID LEVEL**

DATE STARTED

TIME : 8:30

6/14/92

DATE : 6/14

DATE FINISHED \_\_\_\_\_

HOLE DEPTH: 51

6/14/92

[illegible]

SL5 SL501724

2/5 25TH

Anders Arbman



## TEAD-N PHASE I RFI

# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB 029

Page 1

of 1

### LOCATION of Soil Borings

Foot N.S. \_\_\_\_\_  
Foot E.W. \_\_\_\_\_  
of Survey Ref. \_\_\_\_\_

55° TO WINDSOCK W  
BL 06 576

163° TO STATE 29-3  
AT TELEPHONE POLE

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST R. HOLDMAN/F. MOBERG

DATE 6/13/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG CME-750

BORING DIAMETER 0-4' = 2 1/2" 4-5' = 1.875"

TYPE OF SAMPLE SPT SAMPLE

FLUID LEVEL			DATE STARTED
TIME	<u>10:15</u>		<u>6/13/92</u>
DATE	<u>6/13</u>		DATE FINISHED
HOLE DEPTH	<u>5'</u>		<u>6/13/92</u>

SAMPLE INTERVALS	BLOWS PER IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/FID READING OR COMMENT
0-2'	5	SM	2.5YR 5/2	20	60	20	SM	0	SL. MORT, DARK GRAY, NON-COHERENT	Open
	13							1	LOOSE, SPT SAND w/ GRAVEL, SAND	
	13								FINE TO COARSE, AFB. TO SUB AFB GRAVEL, FINE TO	
	18							2	COARSE, SUB AFB.	
2-4'	20	GM-GC	2.5YR 5/2	20	20	10		2	Slightly moist, brown, non-cohesive -	Open
	87							3	Very dense, well graded gravel w/	
	87							4	silt and sand, very fine sub rounded	
	116							5	sand, sub angular - sub rounded	
4-5'	87							6	coarse gravel to cobbles	Open
	52							7	like	
								8		
								9		

SL = slightly  
like = as above

TEAD-N PHASE I RFI

PROJECT NO. 2042.0120

STWALI No. 29  
Boring No. 58 029 023  
Page 1  
01 1

Feet N.S. \_\_\_\_\_  
Feet E.W. \_\_\_\_\_  
of Survey Plat. \_\_\_\_\_

205° TO STAKE 29-3  
AT TELEPHONE POLE.

GEOLOGIST B. HOLDWAY / P. MORETON

DATE 6/13/92

DRILLING CONTRACTOR *OVERLAND DRILLING*

DRILL RIG CONE-750

**BORING DIAMETER** 0-4' = 2" 4-5' = 1.875"

TYPE OF SAMPLE SPT SAMPLE

DATE STARTED

6/13/92

DATE FINISHED \_\_\_\_\_

6/13/92

[illegible]

SL = Slightly  
Ad. = as above

## TEAD-N PHASE I RFI

**PROJECT NO.** 4-0120

# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

SWMU No. 29  
 Boring No. SB 029 0  
 Page 1  
 of 1

**LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

46.5' TO WIND SOCK ON  
BLD 576

228' TO STAKE 29-3  
AT TELEPHONE POLE

LOG SHEET NUMBER (Borepage no.) 1  
 GEOLOGIST B. HOLMAN / F. MORETON  
 DATE 6/13/92  
 DRILLING CONTRACTOR OVERLAND PROSPECT  
 DRILL RIG ONE-750  
 BORING DIAMETER 0-4' = 2" 4-5' = 1.875"  
 TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME				<u>6/13/92</u>
DATE				DATE FINISHED
HOLE DEPTH				<u>6/13/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN.	LOGS SYMBOL	MUNNELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
<u>0-5'</u>	<u>17</u>	<u>ML</u>	<u>MOYR</u>	<u>15</u>	<u>35</u>	<u>50</u>	<u>ML</u>	<u>0</u>	<u>moist, very dark brownish gray, low plasticity</u>	
<u>5'-5'</u>	<u>45</u>	<u>ML</u>		<u>40</u>	<u>50</u>	<u>50</u>		<u>1</u>	<u>low strength, sandy silt w/ gravel, sand very fine to coarse, angular to sub-angular.</u>	
	<u>46</u>							<u>2</u>	<u>gravel, fine to coarse, sub-angular.</u>	
	<u>53</u>							<u>3</u>	<u>slightly moist, light brownish gray, non-cohesive dense - v. dense, well graded gravel w/ silt + sand, sand well graded - fine, sub-rounded.</u>	
	<u>47</u>							<u>4</u>	<u>gravelly LS + silt, fine to cobbles.</u>	
	<u>64</u>							<u>5</u>	<u>subangular to sub-round gravel.</u>	
	<u>53</u>							<u>6</u>		
	<u>70</u>							<u>7</u>		
								<u>8</u>		
								<u>9</u>		

LS = limestone  
Grav = gravelite



TEAD-N PHASE I RFI

PROJECT NO. 20-02.0120

Page 1  
Of 1

HOLE DEPTH			6'13/92
------------	--	--	---------

SL = Slightly  
Grit = quartzite  
LS = Limestone  
AA = As above  
TEAD-N PHASE 1 PFI

**PROJECT NO. 2-42.0120**



# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

SWML No. 29

Boring No. 36 029

Page 1 of 1

## **LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Plat. \_\_\_\_\_

47° TO WEST LOCK ON  
 6106 576  
 200° TO STAKE 29-3  
 AT TELEPHONE POLE

LOG SHEET NUMBER (Borepage no.) \_\_\_\_\_

GEOLOGIST B. HOLMWAY / F. MORETON

DATE 6/14/92

DRILLING CONTRACTOR ANDREW P. LENT

DRILL RIG \_\_\_\_\_

BORING DIAMETER 11-4" = 2" 4-5" = 1.875"

TYPE OF SAMPLE SPT SAMPLE

FLUID LEVEL				DATE STARTED
TIME	9:30			6/14/92
DATE	6/14/92			DATE FINISHED
HOLE DEPTH	5'			6/14/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MINNELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-2'	22	SP	10YR 5/6	25	35	40	Sm	0	St. moist. Brown to dark brown, LOOSE TO	Open
	26							1	AND COARSE, SILETY SAND of gravel, sand fine	
	11								TO COARSE, AND TO SUB ROUND, GRAVEL FINE	
	20							2	TO COARSE, sub fine TO SUB ROUND	
2-4'	20	SW	10YR 5/6	25	35	40	SW	2	Wet, brown to dark brown, med. density	Open
	25							3	Wet, graded sand w/ gravel,	
	27							4	sub angular to subround sand + gravel,	
	35								sand is fine to v. coarse.	
4-5'	31							5		
	29							6		
								7		
								8		
								9		

SLT SLEIGHTLY  
 MOD. MODERATE  
 REVELLY  
 AND MODERATE  
 TEAD-N PHASE I RFI

AND MODERATE  
 W/ S WSTW

PROJECT NO. 2942.0120

# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SHAL No. 29  
Boring No. 029 027  
Page 1  
of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
Feet E.W. \_\_\_\_\_  
of Survey Ref. \_\_\_\_\_

239° TO STAKE 29-3  
AT TRESPASS POLE.

42° TO WIND SOCK on  
BLDG 576

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST B. HOLDAWAY / F. MORETON

DATE 6/14/92

DRILLING CONTRACTOR OUTLAND DRILLING

DRILL RIG \_\_\_\_\_

BORING DIAMETER 3-4' = 2" 4-5' = 1.875"

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL			DATE STARTED
TIME	10:30		6/14/92
DATE	6/14		DATE FINISHED
HOLE DEPTH	5'		6/14/92

SAMPLE INTERVALS	BLOWS PER IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/FID READING OR COMMENT
0-2'	13	SPM	10YR 5/2	25	35	40	SM	0	SL, MEST, LIGHT YELLOWISH BROWN, LOOSE TO MOD. DENSE, SILTY SAND w/ GRAVEL	Open
	18							1	VERY FINE TO COARSE, SUB ANG TO SUB ROUND, GRAVEL	
	24							2	FINE TO COARSE, SUB ANG TO SUB ROUND	
	64							3	slightly moist, yellowish brown, mod. dense, silty sand w/ sand, very fine to fine sand, sub angular to sub-round gravel. Gravel is L.S. or Quartzite.	Open
2-4'	26	GM	10YR 5/2	25	30	20	CM	4		
	29							5		
	32							6		
	34							7		
4-5'	42							8		
	49							9		

SL = SILTY  
MOD. DENSELY  
w/ sand  
Anders Ambrose  
TEAD-N PHASE I RFI

L.S. = LIMESTONE  
GRAVEL = QUARTZITE

PROJECT NO. 10120

**SOIL BORING LOG**  
**JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

SWMU No. 29  
 Boring No. SB 029 028  
 Page 1  
 of 1

**LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

240° TO SNE 29-3  
AT TELEPHONE POLE.

273° TO WIND SOCK ON  
BLDG 576

LOG SHEET NUMBER (Borepage no.) 1

GEOLOGIST G. HOLDAWAY / F. MCRETON

DATE 6/15/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG \_\_\_\_\_

BORING DIAMETER 0-4" = 2" 4-5" = 1.875"

TYPE OF SAMPLE SPT SAMPLES

FLUID LEVEL				DATE STARTED
TIME	<u>1500</u>			<u>6/15/92</u>
DATE	<u>6/15</u>			DATE FINISHED
HOLE DEPTH	<u>5'</u>			<u>6/15/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
<u>0-2'</u>	<u>14</u>	<u>SM</u>	<u>10YR 5/6</u>	<u>15</u>	<u>40</u>	<u>45</u>	<u>SM</u>	<u>0</u>	<u>SL, MOIST, BROWN TO DARK BROWN, JOINTED, LOW STIFFNESS, SATY SAND w/ GRAVEL, SAND</u>	
	<u>19</u>							<u>1</u>	<u>VERY FINE TO MEDIUM ANGULAR TO SUB ROUND, GRAVEL FINE TO COARSE, SUB ANGULAR TO SUB ROUND</u>	
<u>2-4'</u>	<u>27</u>	<u>ML</u>	<u>10YR 5/6</u>	<u>35</u>	<u>25</u>	<u>40</u>	<u>ML</u>	<u>2</u>	<u>mod. dense, silt w/ sand; v. fine to v. coarse, well</u>	
	<u>25</u>							<u>3</u>	<u>graded, sub rounded sand, gravel to coarse, round.</u>	
	<u>30</u>							<u>4</u>		
<u>4-5'</u>	<u>20</u>							<u>5</u>	<u>fine</u>	
	<u>19</u>							<u>6</u>		
								<u>7</u>		
								<u>8</u>		
								<u>9</u>		

SL = clayey mod = moderately M = moist  
v. = very  
a.a. = as above  
 TEAD-N PHASE I RFI

# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWIMJ No. 29  
Bore No. 58 029 029  
Page 1  
Of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
Feet E.W. \_\_\_\_\_  
of Survey Ref. \_\_\_\_\_

316° TO WIND SOCK ON  
BL06 576.

244° TO STATE 29-3 AT  
TELEPHONE POLE.

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST B. HOLSTEN / F. MORETON

DATE 6/15/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG

BORING DIAMETER 0-4' = 2" 4-5' = 1.875"

TYPE OF SAMPLE SPT SAMPLE

FLUID LEVEL				DATE STARTED
TIME	1325			6/15/92
DATE	6/15			DATE FINISHED
HOLE DEPTH	5'			6/15/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/FID READING OR COMMENT
0-2'	6	ML	10YR 8/2	10	15	75	ML	0	DRY, VERY FINE SANDS, SOME SILT, NO CLAY	Open
	8							1	LOW STIFFNESS, SILT w/ SAND, SAND VERY FINE	
	8								TO FINE, SUB ANGULAR TO SUB ROUND (GRAVEL FINE	
	10							2	TO COARSE, SUB ROUND.	
2-4'	18	ML	10YR 8/2	15	45	70		3	DRY, GRAY BROWN, LOW PLASTICITY,	Open
	20								LOW STIFFNESS, SILT w/ SAND,	
	80							4	SAND MORE TO VERY COARSE, ANGULAR	
	55								TO SUB-ANGULAR, GRAIN FINE TO	
4-5'	68							5	COARSE, ANGULAR TO SUB-ANGULAR.	Open
	133							6		
								7		
								8		
								9		

SEE A.A. 245 above  
w/ WPT



TEAD-N PHASE I RFI

PROJECT NO. 2.0120

# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB 029

Page 1

Of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
Feet E.W. \_\_\_\_\_  
of Survey Ref. \_\_\_\_\_

33° TO STAKE 29-3 AT  
TELEPHONE POLE

148° TO WELL T-7  
SOUTH OF SWMU 29

LOG SHEET NUMBER (Borepage no.) 1

GEOLOGIST B. HOLDEN / F. MORETON

DATE 6/17/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG CME 750

BORING DIAMETER 0-4' = 2" 4-5' = 1.875"

TYPE OF SAMPLE SPT SAMPLES

FLUID LEVEL			DATE STARTED
TIME	<u>8:05</u>		<u>6/17/92</u>
DATE	<u>6/17/92</u>		DATE FINISHED
HOLE DEPTH	<u>5'</u>		<u>6/17/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/ID READING OR COMMENT
0-2'	9	ML	10YR 5/2	20	30	50	ML	0	DRY, VERY FINE SAND, NON-COHESIVE, CHALKY	
	42							1	LOW STRENGTH, SANDY SILT W/ GRAVEL, SAND	
	42							2	VERY FINE TO MED, SUB-ANG TO ROUND	
	34							3	GRAVEL, FINE TO COARSE, SUB-ANG	
2-4'	27	ML	10YR 5/2	10	35	50		4	ht, dark grayish brown, NON-cohesive, Open	
	28							5	fine to medium dense, sandy silt w/ gravel, gravel is fine, fine to coarse, sub-angular to sub-round;	
	16							6	sand is fine to v. coarse - mostly v. coarse, sub-round.	Open
4-5'	60							7		
	104							8		
								9		

fine - fine to med sub - subround  
v. very  
fine medium



TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SWMU No. 29  
 Entry No. 58 029 031  
 Page 1  
 of 1

Feet N.S. \_\_\_\_\_  
Feet E.W. \_\_\_\_\_  
of Survey Ref. \_\_\_\_\_

44° TO STATE 29-3  
AT TELEPHONE POLE.

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL			DATE STARTED
TIME	9:30		6/17/92
DATE	6/17/92		DATE FINISHED
HOLE DEPTH	5'		6/17/92

[illegible]

L.S = Limestone  
Shale = sandstone

## TEAD-N PHASE I RFI

**02.0120**

# PROJECT

SWMU No. 29  
Boring No. 58029, 01  
Page 01 / 1

Feet N.S. \_\_\_\_\_  
Feet E.W. \_\_\_\_\_  
of Survey Ret. \_\_\_\_\_

53° TO WIND SOAK ON  
BLDG 576.

TYPE OF SAMPLE SPT SAMPLES

6/17/92

**JAN** SL. 7550772 Y  
AA 2 AS ABOVE.  
V/ 6 N2574  
**TEAD-N PHASE I RFI**

**PROJECT NO. 2942.0120**

# SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWELL No. 2  
 Boring No. 56029 OFB  
 Page 1  
 of 1

## LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

63° TO WIND SOCK ON  
 BLDG 576.

168° TO STAKE 29-3  
 AT TELEPHONE POLE.

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST R. HOLDWAY / F. MORTON

DATE 6/17/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG CMS 7500-2'E 2" 3-5' = 1.875"

BORING DIAMETER 4 1/2" DIA 4 1/2" I.D. 1.125" DIA

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	<u>10:45</u>			<u>6/17/92</u>
DATE	<u>6/17/92</u>			DATE FINISHED
HOLE DEPTH	<u>5'</u>			<u>6/17/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-2'	5	GM	10YR 5/6	45	20	30		0	SL. MUDY DARK BROWN, FINE GRAINED, OPEN	
	8							1	LOOSE, SILTY GRAVEL w/ SAND, GRAVEL PARTS TO	
	8								COARSE, SUB ROUND, SAND VERY HARD TO PASS	
	21							2	SUB ANGULAR, SUB ROUND.	
2-3'	40	GM	10YR 5/6	30	25	15			slightly moist, grayish brown, over-caking, NOT REFRACT	
	126							3	silty gravel w/ sand, gravel to cobbles	AT 2' PULL OUT
3-5'	26								stiff sub-angular; sand very fine -	2 60 IN WITH A
	36							4	sub-angular.	NEW 2' SPTER
4-5'	42									
	48									
								5		
								6		
								7		
								8		
								9		

SL = Saturated

TEAD-N PHASE I RFI

2.0120

PROJECT NO.



# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMJ No. 29  
 Boring No. SB 029 01  
 Page 1 of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

82° TO WIND SACK ON 8106  
 576.

181 1/2° TO STAKE 29-3 AT  
 TOLWANE 8016.

LOG SHEET NUMBER (Bore/page no.)

GEOLOGIST R. H. MONTGOMERY / F. MONTGOMERY

DATE 6/17/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG CME 750

BORING DIAMETER 0-4' 5 1/2" 4-5' = 1.875"

TYPE OF SAMPLE SPT SAMPLES

FLUID LEVEL				DATE STARTED
TIME	11:50			6/17/92
DATE	6/17/92			DATE FINISHED
HOLE DEPTH	5'			6/17/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FOI/PID READING OR COMMENT
0-2'	3	GM		20	30			0	U.S.I. MIST, VERY DARK GRAY/BLACK, LOOSE, SIFTY GRAVEL w/ SAND. GRAVEL, FINE TO COARSE, SUB ROUND SAND. FINE TO MEDIUM, SUB ANGULAR TO SUB ROUND	Open
	6							1		
	10							2		
	8							3		
2-4'	11	GM		15	15			4	slightly moist, dark grayish brown, very cohesive, silty sand w/ sandy gravel 15-4 grains - fine to medium, sub-angular; sand more to coarse, sub-angular.	Open
	52							5		
	56							6		
	39							7		
4-5'	37							8		
	47							9		

PROJECT NO. 2942.0120

JMM



as is shown w/ water  
 vs. very  
 SLE SLEIGHTLY  
 TEAD-N PHASE I RFI

# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWELL No. 29  
 Boring No. 58 029 025  
 Page 1  
 of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

111° TO STAKE 29-1 on SE  
 CORNER OF BLK 576  
 188° TO STAKE 29-3 on  
 TELEPHONE POLE.

LOG SHEET NUMBER (Bore/page no.)

GEOLOGIST R. HOLMQUIST / F. MORETON

DATE 6/17/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG CME 750

BORING DIAMETER Ø-4" = 3" 4-5" = 1.875"

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	12:25			6/17/92
DATE	6/17/92			DATE FINISHED
HOLE DEPTH	5			6/17/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	4	SM	10YR 2.5/1	15	40	20		0	SL. MORT. VERY DARK BROWN, LOOSE	Open
	8						SM	1	SILTY SAND w/ GRAVEL, SAND VERY FINE TO MED; SUB ANGULAR TO SUB ROUND, GRAY	
	15								FINE TO COARSE, SUB ANGULAR TO SUB ROUND	
	16							2	slightly moist, very dark grayish brown	Open
2-4'	55	GM	10YR 3/10	10	20		GM	3	fine, non-cohesive, silty sand w/ sand;	
	24								gravel coarse to medium, angular to sub-	
	58							4	angular; sand v. fine to	
	68								fine sub angular to sub round.	Open
4-5'	64							5	1/2"	
	48							6		
								7		
								8		
								9		

W/ LOGS  
 V = very  
 AS = about  
 TEAD-N PHASE I RFI

PROJECT NO. 2.0120



Serial No. 29  
Drawing No. 08 029 08  
Page 1  
Of 1

FLUID LEVEL				DATE STARTED
TIME	1400			6/17/92
DATE	6/17/92			DATE FINISHED
HOLE DEPTH	5'			6/17/92

[illegible]

**JAN**      we have      w/ length  
 1-5 = 4 one stone  
 black & granite  
**TEAD-N PHASE I RFI**

0120

# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWRIJ No. 42

Boring No. 25-42-0

Page 1 of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
Feet E.W. \_\_\_\_\_  
of Survey Ref. \_\_\_\_\_

281° to S.S. 42-1  
240° to S.S. 42-3

Feet 1' 2' 3' 4' 5' 6' 7' 8' 9' 10'

LOG SHEET NUMBER (Borepage no.) 1

GEOLOGIST B. Hobbins / F. Morgan

DATE 6/26/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG CME 750

BORING DIAMETER 0-4" = 2.5" 9-5' = 2"

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	05:25			6/26/92
DATE	6/26/92			DATE FINISHED
HOLE DEPTH	5'			6/26/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	UNUSUAL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-2'	8	ML	ROK <sup>2</sup>	5-10	20	70		0	SL. MIST, dark brown, low plasticity	Open
	6							1	Low plasticity SILT w/ sand; sand	
	15								V. FINE TO MEDIUM, SUB-SAND	
	21							2	GRAVEL FINE TO COARSE SAND, MIST-SAND	
2-4'	32	SM	10YR 2/2	20	40	40		3	SL. MIST, LT YELLOWISH BROWN, MEDIUM OPEN	
	37							4	COARSE, SELTY SAND w/ GRAVEL, SAND	
	30							5	VERY FINE TO FINE, ANGLULAR TO SUB-ANGULAR GRAVEL FINE TO MEDIUM	
4-5'	45							6	SUB ANGLULAR TO SUBROUND	Open
	42							7		
								8		
								9		
								10		
								11		
								12		
								13		
								14		
								15		
								16		
								17		
								18		
								19		
								20		
								21		
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								26		
								27		
								28		
								29		
								30		
								31		
								32		
								33		
								34		
								35		
								36		
								37		
								38		
								39		
								40		
								41		
								42		
								43		
								44		
								45		
								46		
								47		
								48		
								49		
								50		

TD = Total Depth

2-3 = gravelly silts

SL = slightly w/ 2 with

TEAD-N PHASE I RFI

V.S. = very

Sub = subangular

PROJECT NO. 2942.0129

# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

SHOULD No. 42

Boring No. SB 42-002

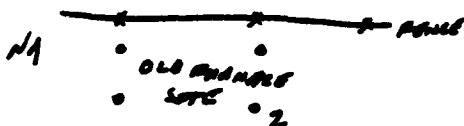
Page 1  
 of 1

## **LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Plat. \_\_\_\_\_

320° TO SURVEY STAKE 42-1  
 242° TO SURVEY STAKE 42-3

~~TO BUN~~



LOG SHEET NUMBER (Borepage no.) 1

GEOLOGIST R. HALLAWAY / F. MORETON

DATE 6/26/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG CME 750

BORING DIAMETER 0-4' = 2.5" 4-5' = 2"

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL			DATE STARTED
TIME	<u>0910</u>		<u>6/26/92</u>
DATE	<u>6/26/92</u>		DATE FINISHED
HOLE DEPTH	<u>5'</u>		<u>6/26/92</u>

SAMPLE INTERVAL	BLOWS PER IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-2'	11	ML	10YR 5/6	20	15	65	ML	0	SLEETLY MISTY BROWN - DARK BROWN, LO	Open
	13							1	ARTIFICIALLY LOW STIFFNESS, SANDY SILT w/	
	31								GRAVEL; GRAVEL FINE TO COARSE, SUB-ANGULAR	
	18						SM	2	TO SURROUND; SAND FINE, SUB-ANGULAR	
2-4'	29	SM	10YR 5/6	20	40	40	SM	3	SL. MISTY, PALE BROWN, MEDIUM	Open
	41								DENSE TO DENSE, SILENTY SAND w/	
	61							4	GRAVEL, SAND VERY FINE TO FINE	
	63								ARTIFICIALLY TO SURROUND, GRAVEL FINE	
4-5'	60							5	TO MEDIUM, ARTIFICIALLY TO SURROUND	Open
	60							6		
								7		
								8		
								9		

**SL. & SLEETLY**  
**w/s MISTY**  
**T.O. = TOTAL BATH**  
**TEAD-N PHASE I RFI**

PROJECT NO. 20-02-0120

SURAJ No. 42  
Boring No. 58 42  
Page 1  
Of 1

**PROJECT NO. 2042.0129**

Drawing No. 42  
 Drawing No. SB 42 00  
 Page 1  
 of 1

N1

old machine  
LIVE

40

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL			DATE STARTED
TIME	1045		6/26/92
DATE	6/26/92		DATE FINISHED
HOLE DEPTH	5'		6/26/92

[illegible]

Sum T.O. = total worth  
w/ worth

## TEAD-N PHASE I RPT

**PROJECT NO.** 2042.0120



# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

SWRIJ No. 42  
 Boring No. SB 42-0  
 Page 1  
 of 1

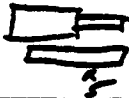
## **LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Plat. \_\_\_\_\_

30° TO SURVEY STAKE 42-1  
 292° TO SURVEY STAKE 42-3

ROAD WENT OUT  
 600

N ↓



LOG SHEET NUMBER (Borepage no.) 1  
 GEOLOGIST R. HOLDWAY, F. MORETON  
 DATE 6/26/92  
 DRILLING CONTRACTOR OVERLAND DRILLING  
 DRILL RIG CME 750  
 BORING DIAMETER 0-4' = 2 1/2" 4-5' = 2"  
 TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	<u>1150</u>			<u>6/26/92</u>
DATE	<u>6/26/92</u>			DATE FINISHED
HOLE DEPTH	<u>5'</u>			<u>6/26/92</u>

SAMPLE INTERVALS	BLOWS PER IN	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-2'	15	SM	10YR 5/2	3/8	40	30	SM	0	SLIGHTLY MOIST, DARK GRAYISH BROWN	Open
	19							1	LOW PLASTICITY, MOIST TO LOW STIFFNESS	
	17							2	SALTY SAND w/ GRAVEL; GRAVEL FINE	
	12							3	TO MEDIUM GRAVEL, MOIST TO SUBSANGRY, VERY FINE TO MEDIUM	
2-4'	9	SM	10YR 5/2	3/8	40	25	T.O.P. 5'	4	VERY SL. MOIST, DARK, MEDIUM DENSE TO	Open
	22							5	DENSE, SALTY SAND w/ GRAVEL, SAND	
	29							6	VERY FINE TO FINE, SUBSANGRY TO	
	41							7	SUBSANGRY GRAVEL FINE TO MEDIUM,	
4-5'	46							8	SUBSANGRY TO SUBSANGRY.	Open
	54							9		

SL. 05420004  
 T.O.P. 5' DEPTH  
 w/ 5' DEPTH  
 TEAD-N PHASE I RFI

# SOIL BORING LOG

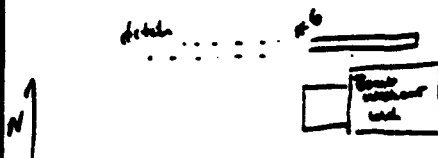
## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Boring No. 42  
 Boring No. SB 42 006  
 Page 1  
 of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ret. \_\_\_\_\_

128° to survey stake 42-2  
 312° to survey stake 42-4



LOG SHEET NUMBER (Borepage no.) 1  
 GEOLOGIST E. Holden / F. Moreton  
 DATE 6/26/92  
 DRILLING CONTRACTOR OVERLAND DRILLING  
 DRILL RIG CME 750  
 BORING DIAMETER 2 1/2"  
 TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	12:40			6/26/92
DATE	6/26			DATE FINISH
HOLE DEPTH	5'			6/26/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MANSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-2'	3	ML	10YR 2/2	10-15	40	45	ML	0	dry, very dark grayish brown, low plasticity	0 ppm
	8							1	change to low stiffness, sandy silt w/ gravel; gravel - fine to coarse, sub-round;	
	9							2	sand - very fine, sub-round to sub-angular.	
2-4'	21									
	27	SM	10YR 6/2	20-25	55	20	SM	3	Sl. moist, grayish brown, medium density, silty sand w/ gravel; sand -	
	40							4	very fine to fine, sub-angular to	
	65							5	sub-round; gravel - fine to medium, sub-round.	
4-5'	31							6		
	33						TD = 5'	7		
								8		
								9		

PROJECT NO. 29-02.0120



SL = slightly  
 TD = total depth  
 w/c = with  
 TEAD-N PHASE I RFI

# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 42

Boring No.

55-42-009

Page

01

### LOCATION of Soil Borings

Foot N.S. \_\_\_\_\_

Foot E.W. \_\_\_\_\_

of Survey Plat. \_\_\_\_\_

127' to survey stake 42-2

313' to survey stake 42-4

9N 77' gravel ditch

1 Bomb  
mark and  
boundary

LOG SHEET NUMBER (Bore/page no.) \_\_\_\_\_

GEOLOGIST R. Hylkema / F. Morston

DATE 6/26/92

DRILLING CONTRACTOR Overland Drilling

DRILL RIG cone - 750

BORING DIAMETER 2.5"

TYPE OF SAMPLE SPT sampler

FLUID LEVEL				DATE STARTED
TIME	13:40			6/26/92
DATE	6/26			DATE FINISHED
HOLE DEPTH	5 ft			6/26/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MOUSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-2'	6	ML	10R 1/2	5-20	35	45	ML	0	dry, dark grayish brown, low plasticity.	0 ppm
	20							1	None to low stiffness, sandy silt w/ gravel; gravel - fine, sub-round to round; sand - very fine to fine, sub-round to sub-angular.	
	21							2		
	19							3		
2-4'	12						ML	4	over, gray, low plasticity, low stiffness, silt w/ sand; sand - very fine to fine, angular to sub-angular.	0 ppm
	2							5		
	2	ML	7.5R 1/2	0	25	75		6		
	2							7		
4-5'	2						TD: 5 ft	8		
								9		



w/ = with

TD = total depth

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

BORING NO. 42  
 Boring No. SB-42-008  
 Page 1  
 of 1

## **LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

351° to 42-4 survey stake  
 130.5° to 42-2 survey stake

LOG SHEET NUMBER (Bore/page no.) \_\_\_\_\_  
 GEOLOGIST B. Haldeman / F. Marston  
 DATE 6/27/92  
 DRILLING CONTRACTOR Overland Drilling  
 DRILL RIG CME 750  
 BORING DIAMETER 2 1/2" from 0-4' 2" from 4-5'  
 TYPE OF SAMPLE SPT SAMPLE

FLUID LEVEL				DATE STARTED
TIME	9:00			6/27/92
DATE	6/27/92			DATE FINISHED
HOLE DEPTH	4' 2"			6/27/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-2'	4	ML	10YR 2 1/2	25	95	40	ML	0	dry, very dark grayish brown; low	0 per
	14							1	plasticity, notes low stiffness, sandy	
	90	Gm	10YR 5	45	35	20		2	silt w/ gravel; gravel - fine to coarse, cobbles & boulders, sub-round to round.	0 per
2-4'	57						Gm	3		
	57							4	dry, brown, dense, silty gravel w/ sand; gravel - fine to coarse, cobbles and boulders (causing refusal at 4'), angular to sub-round; sand - very fine to fine, sub-angular	
	57							5		
	91							6		
	100						4' 2"	7		
								8		
								9		

 JMM

↓ = sand  
 w/ = with



TEAD-N PHASE I RFI

PROJECT NO. 2002.0120

# SOIL BORING LOG

## JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 42  
 Boring No. SB 42-01  
 Page 1  
 Of 1

### LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

135° to survey stake 42-2  
 144° to survey stake 42-4

LOG SHEET NUMBER (Bore/page no.) \_\_\_\_\_

GEOLOGIST B. Holdaway / F. Morton

DATE 6/27/92

DRILLING CONTRACTOR Orceland Drilling

DRILL RIG CME

BORING DIAMETER 0-4' = 3 1/2" 4-5' = 2"

TYPE OF SAMPLE SPT sampler

FLUID LEVEL			DATE STARTED
TIME	<u>10:00</u>		<u>6/27/92</u>
DATE	<u>6/27/92</u>		DATE FINISHED
HOLE DEPTH	<u>5'</u>		<u>6/27/92</u>

SAMPLE INTERVALS	BLOWS PER IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PUMPED READING OR COMMENT
0-2'	5	ML	10YR 2/1	15	35	50	ML	0	dry, dark grayish brown, low plasticity,	Open
	15							1	more to low stiffness, sandy silt w/ gravel;	
	16								gravel - fine to coarse, sub-round to round	
	23							2		
2-4'	78	SM	10YR 6/3	20	45	35	SM	2	Dry, Brown, low plasticity, very	Open
	63							3	dense, silty sand w/ gravel; sand -	
	80								very fine to fine, angular to sub-	
4-5'	35							4	angular; gravel - fine to coarse,	
	22								sub-round.	Open
								5		
								6		
								7		
								8		
								9		

TD = TOTAL DEPTH  
 w/ 2 WFT

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

Boring No. 42  
 ST-42-010  
 Page 1  
 of 1

**LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

315° to survey stake 42-5  
 130° to survey stake 42-4

LOG SHEET NUMBER (Bore/page no.) 1  
 GEOLOGIST B. Holdaway / F. Morton  
 DATE 6/27/92  
 DRILLING CONTRACTOR OVERLAND DRILLING  
 DRILL RIG CME 750  
 BORING DIAMETER 0-4' = 3", 4-5' = 2"  
 TYPE OF SAMPLE ST SAMPLE

FLUID LEVEL				DATE STARTED
TIME	11:05			6/27/92
DATE	6/27/92			DATE FINISHED
HOLE DEPTH	5'			6/27/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-2'	2	GM	10YR 5	45	35	20	GM	0	dry, dark grayish brown, <del>fine</del> loess.	0 rem
	15							1	silty gravel w/ sand; gravel - fine to coarse, sub-round; sand - v. fine to fine, sub-round to round	
	44							2	dry, pale brown, low plasticity, moderate stiffness, moderately dense	0 rem
	50							3	silty clayey gravel w/ sand; gravel fine to coarse, sub-round; sand - v. fine to fine, angular to sub-	0 rem
2-4'	40	GM-SC	10YR 4.5	40	30	30	GM-SC	4	angular.	
	55							5		
	49							6		
	49							7		
4-5'	19						TO: 5M	8		
	25							9		

v. = very  
 w/ = with



**TEAD-N PHASE I RPT**

PROJECT NO. 2042.0120

# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

SWMU No. 42

Boring No. SB-42-01

Page 1  
 of 1

## **LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

*50' to survey stake 42-5  
 123' to stake 42-4*

LOG SHEET NUMBER (Borepage no.) 1

GEOLOGIST D. Holdaway / F. Moreton

DATE 6/27/92

DRILLING CONTRACTOR Oisland Drilling

DRILL RIG CME 750

BORING DIAMETER 0-4 = 2.5" 4-5 = 2"

TYPE OF SAMPLE SPT

FLUID LEVEL				DATE STARTED
TIME	<u>12:10</u>			<u>6/27/92</u>
DATE	<u>6/27</u>			DATE FINISHED
HOLE DEPTH	<u>5' 4.8"</u>			<u>6/27/92</u>

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	RDPID READING OR COMMENT
0-2'	3	ML	10YR 2.5	20	30	50	ML	0	dry, very dark grayish brown, low	0
	8							1	plasticity, dense to low stiffness; sandy	
	34								silt w/ gravel? gravel - fine to coarse	
	38							2	sub-round; sand - very fine to coarse,	
2-4'	47	GM	10YR 2.5	45	40	15	GM		sub-round to sub-angular	0
	59							3		
	57								dry, dark grayish brown, very	
	69							4	dense, silty gravel w/ sand - gravel -	
4'-4.8"	61						TD = 4.8"		fine to coarse, sub-round. Sand	0
	100							5	1/2 fine to fine, sub-angular.	Refusal at 4.8"
								6		
								7		
								8		
								9		

TD = Total Depth  
 w/a with  
 via vwy

TEAD-N PHASE I RFI

PROJECT NO. 2042.0120

# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

Boring No. 42  
 SR-42-012  
 Page 1  
 of 1

## **LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

131° to survey stake 42-2  
 343° to survey stake 42-5

LOG SHEET NUMBER (Bore/page no.) \_\_\_\_\_

GEOLOGIST E. Haldeman / F. Marston

DATE 6/27/92

DRILLING CONTRACTOR Overland Drilling

DRILL RIG CME 750

BORING DIAMETER 8-4" = 2 1/2" 4-5" = 2"

TYPE OF SAMPLE SPT sampler

FLUID LEVEL				DATE STARTED
TIME	12:45			6/27/92
DATE	6/27/92			DATE FINISHED
HOLE DEPTH	5'			6/27/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MINNELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-2	3	SM	2.5K	0-5	70	25	SM	0	dry, dark brown, loose, silty sand;	0
	4							1	sand - very fine, sub-round to sub-angular	
	3									
	4									
2-4'	3	SM	10R	0	85	15	SM	2	dry, yellowish brown, loose, silty	0
	6							3	sand. Sand very fine, sub-angular to sub-round.	
	6									
	7									
4-5'	12							4	A.A	0
	17									
								5		
								6		
								7		
								8		
								9		

TD = TOTAL DEPTH  
 A.A = As above

TEAD-N PHASE I RFI

PROJECT NO. 2-m-2.0120



# **SOIL BORING LOG** **JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.**

SWRIJ No. 42  
 Boring No. SB-42-0  
 Page 1  
 of 1

## **LOCATION of Soil Borings**

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Ref. \_\_\_\_\_

124° to survey stake 42-5  
 131° to survey stake 42-2

LOG SHEET NUMBER (Bore/page no.) \_\_\_\_\_

GEOLOGIST B. L. Hannon / F. Manton

DATE 6/27/92

DRILLING CONTRACTOR Overland Drilling

DRILL RIG CME 75D

BORING DIAMETER 0-4' = 2 1/2" 4-5' = 2"

TYPE OF SAMPLE \_\_\_\_\_

FLUID LEVEL				DATE STARTED
TIME	13:15			6/27/92
DATE	6/27/92			DATE FINISHED
HOLE DEPTH	5'			6/27/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MANNING COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	RDPID READING OR COMMENT
0-2'	1	SM	7.5YR 5/2	0	80	20		0	dry, dark brown, loose, silty sand;	0
	1						SM	1	sand is very fine, sub-round, sub-angular	
	4									
	6									
2-4'	6	SM	10YR 5/4	0	85	15		2	dry, yellowish brown, loose, silty sand;	0
	5						SM	3	sand - v. fine, sub-angular to sub-round	
	4									
	4									
4-5'	4							4	A.A.	0
	8									
							TD	5		
							SP	6		
								7		
								8		
								9		

v. = very

TD = total depth

AA = as shown

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

# SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Sheet No. 45  
 Boring No. SB-45-001  
 Page 1  
 of 3

## LOCATION of Soil Borings

Feet N.S. \_\_\_\_\_  
 Feet E.W. \_\_\_\_\_  
 of Survey Plat. \_\_\_\_\_

190° + 25' 6"  
 TO POINT 45-1.

LOG SHEET NUMBER (Borepage no.) \_\_\_\_\_

GEOLOGIST B. Hildner / F. Morison

DATE 6/25/92

DRILLING CONTRACTOR Overland Drilling

DRILL RIG CMF 750

BORING DIAMETER 2.5"

TYPE OF SAMPLE SPT

FLUID LEVEL			DATE STARTED
TIME	<u>12:10</u>		<u>6/25/92</u>
DATE	<u>6/25/92</u>		DATE FINISHED
HOLE DEPTH	<u>25 ft</u>		<u>6/25/92</u>

SAMPLE INTERVALS	BLOWS PER IN	USCS SYMBOL	MINNELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIELD READING OR COMMENT
0-1'	2	ML	5YR 2.5	0	20	80	ML	0	<del>VERY</del> DARK RED BROWN, LOW PLASTICITY	Open
	2							1	LOW STIFFNESS, SILT w/ SAND; SAND -	
1-3'	4						ML		VERY FINE TO FINE, SUB-ANGULAR TO SUB-ROUND	
	2							2		
	1						NR			
	62							3		
3-5'	66	GM	10YR 5.5	40	30	30	GM		<del>VERY</del> SANDY BROWN, VERY DENSE TO VERY	Open
	35							4	SILTY GRAVEL w/ SAND; SAND FINE TO	
	15						NR		VERY COARSE, ANGULAR, GRAVEL FINE TO COARSE,	
	14							5	ANGULAR TO SUB-ANGULAR	
5-7'	12	ML	10YR 4.5	10	15	75	ML		MAY, PALE BROWN, LOW PLASTICITY, LOW STIFFNESS.	
	14							6	SILT w/ SAND; SAND - VERY FINE, SUB-	
	5								ANGULAR TO SUB-ROUND	
	5							7		
7-9'	7									Open
	8							8		
	9									
	9							9		
9-11'	2	CL	10YR 4.5	0	10	90	CL		MAY, PALE BROWN, LOW TO MODERATE PLASTICITY.	Open
	2								LOW TO MODERATE STIFFNESS, LOW CLAY; SAND	

✓/worth  
 ML = No. 40  
 CL = slightly

TEAD-N PHASE I RFI

PROJECT NO. 2-0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST R. HAWORTH / F. ROBERTSON  
DATE 6/25/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 45

Boring No. 1

Page 1  
of 1

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	% GRAVEL	% SAND	% FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
	28						CL	10					
	28												
	28												
11-13'	28	ML 100%		0	10	90	ML	11				WET, LT GRAY TO GRAY, LOW PLASTICITY, LOW STRENGTH, SFT. SAND VERY FINE, WELL ROUNDED.	OPN RD/GRN STANDARD
	2							12					
	2												
	2												
13-15'	3	ML 100%		0	10	90	ML	13				WET, LT GRAY TO GRAY, LOW PLASTICITY, NO STRENGTH, SFT. SAND VERY FINE, WELL ROUNDED.	OPN RD/GRN STANDARD
	3							14					
	4												
	5												
15-17'	2	ML 100%		0	10	90	ML	15				A/A	OPN RD/GRN STANDARD
	2							16					
	2												
	5												
17-19'	11						ML	17					
	5	CL 100%		0	0	100	CL	18				WET, LT GRAY TO GRAY, LOW PLASTICITY, NO STRENGTH, SFT. SAND VERY FINE, WELL ROUNDED.	OPN RD/GRN STANDARD
	5												
	6	ML 100%		0	10	90	ML	19				WET, LT GRAY TO GRAY, LOW PLASTICITY, NO STRENGTH, SFT. SAND VERY FINE, WELL ROUNDED.	OPN RD/GRN STANDARD
19-21'	2						ML						
	21												



LT = 150 HR  
RD/GRN = RD/GRN  
RD = MODERATE

A, A = AS LEFT

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. H. HARTY / P. MONTGOMERY  
DATE 6/26/92

TOOELE ARMY DEPOT  
NORTH AREA

SWMU No. 45

Boring No. 58 46

Page 3  
of 7

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE
									LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content: additional facts)		
	32						AL	20			
	37	SM	10YR 5/2	25	45	25	SM	21			
21-23	17						N.R.				
	38						SM				
	29	SM	10YR 5/2	25	55	20	SM	22			
	17										
23-25	2	CL	7.5YR 5/2	0	95	95	CL	23			
	5										
	9										
	13										
							TO 25'	25			
								6			
								7			
								8			
								9			



N/ WITH  
MED S. MONTGOMERY  
T.D. < TOTAL DEPTH

N.R. NO RECOVERY  
74 = feet

PROJECT NO. 204.0120

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## **Appendix C**

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**MONTGOMERY WATSON**

## **APPENDIX C**

### **DATA QUALITY EVALUATION - CHEMICAL ANALYSES AND DATA QUALITY**

This section describes the types of analyses and quality control (QC) procedures used to ensure collection of reliable data during the Tooele Army Depot North Area (TEAD - N) Suspected Release RCRA Facility Investigation (RFI) Phase I Study. The following documents were utilized during evaluation of the QC data: TEAD - N Suspected Release RFI Phase I Study Data Collection Quality Assurance Plan (DCQAP) (JMM, 1992); U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) Quality Assurance Program, USATHAMA, 1990; User's Guide, The Installation Restoration Data Management Information System (IRDMIS), Volume II Data Dictionary, Potomac Research Institute (PRI), 1991; and the U.S. Environmental Protection Agency's (EPA) Laboratory Data Validation Functional Guidelines for Evaluating Organics and Inorganics Analyses, 1988.

#### **C.1 Analytical Methods**

Soil, sediment, surface water, and groundwater samples were collected from May to August 1992 as part of the TEAD - N Suspected Release RFI Phase I Study and analyzed for numerous organic and inorganic parameters in accordance with the DCQAP. Environmental Science and Engineering, Inc. (ESE) in Gainesville, Florida, performed all the analyses except the dioxin/furan analyses, which were done by Ensco, Inc. in Sacramento, California, and the explosive reactivity tests, which were done by Southwest Research Institute (SRI) in San Antonio, Texas. Classes of chemicals measured in project samples included volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), organochlorine pesticides (OCPs), herbicides, nitroaromatic compounds (explosives), dioxin/furans, metals, explosive reactivity tests (gap testing and internal ignition testing), and miscellaneous chemical parameters as listed in Table C-1.

The compounds analyzed in this phase of work were selected from the 40 CFR, Part 261, Appendix VIII hazardous waste constituents list as required by the TEAD Post Closure Permit. The selection of chemicals of potential concern was based on the probability that they were used at TEAD - N's solid waste management units (SWMUs) or were formed as a result of the activities on the base. A complete discussion of this topic may be found in Appendix E of the DCQAP.

**TABLE C-1**  
**REFERENCE METHODS FOR SOIL AND AQUEOUS SAMPLES**  
**TRAD-N SUSPECTED RELEASE RFI PHASE I STUDY**

Parameter	USEPA Method	USEPA Method	USEPA Method Equivalent		Method Description
	Soil	Aqueous	Soil	Aqueous	
Priority Pollutant Volatile Organic Compounds	LM19	UM30	8240	8240	GC/MS
Priority Pollutant Base/Neutral/Acid (Semivolatile) Extractables	LM18	UM18	8270	8270	GC/MS
Organochlorine Pesticides	LH10	UH13	8080	8080	GC/ECD
Herbicides	LH11	UH14	8150	8150	GC/ECD
Total Analyte List Metals					
Aluminum	JS16	SS10	6010	200.7	ICP
Antimony	JS16	SS10	6010	200.7	ICP
Arsenic	JD19	SD22	7090	200.2	GFAA
Barium	JS16	SS10	6010	200.7	ICP
Beryllium	JS16	SS10	6010	200.7	ICP
Cadmium	JS16	SS10	6010	200.7	ICP
Calcium	JS16	SS10	6010	200.7	ICP
Chromium, total	JS16	SS10	6010	200.7	ICP
Cobalt	JS16	SS10	6010	200.7	ICP
Copper	JS16	SS10	6010	200.7	ICP
Iron	JS16	SS10	6010	200.7	ICP
Lead	JS16	SD20	6010	200.2	ICP/GFAA
Magnesium	JS16	SS10	6010	200.7	ICP
Manganese	JS16	SS10	6010	200.7	ICP
Mercury	JB01	SB01	7471	245.1	Cold Vapor AA
Nickel	JS16	SS10	6010	200.7	ICP
Potassium	JS16	SS10	6010	200.7	ICP
Selenium	JD15	SD21	7740	270.2	GFAA
Silver	JS16	SD23	6010	200.7	ICP
Sodium	JS16	SS10	6010	200.7	ICP
Thallium	JS16	SD20	6010	270.2	ICP/GFAA
Vanadium	JS16	SS10	6010	200.7	ICP
Zinc	JS16	SS10	6010	200.7	ICP
Sulfate, Chloride	KT05	TT10	300.0	300.0	IC
Nitrite Plus Nitrate	KF10	TF22	Modified 305.2	305.2	Technicon
Phosphate	KF14	TF27	Modified 305.1	305.1	Technicon
Total Cyanide	KY01	TF18	9010	205.2	Colorimetric
Total Petroleum Hydrocarbon (TPH-IR)	NA	NA	Extract/ 419.1	419.1	IR
Explosives	LW12	UW32	NA	NA	HPLC
Dioxins/Furans	NA	NA	8280	8280	GC/MS
TCLP Parameters					
TCLP Extractions	NA	005	1311	005	
TCLP VOAs	NA	UM30	NA	8240	GC/MS
TCLP ENAs	NA	UM18	NA	8270	GC/MS

TABLE C-1

**REFERENCE METHODS FOR SOIL AND AQUEOUS SAMPLES  
TEAD-N SUSPECTED RELEASE RFI PHASE I STUDY  
(CONTINUED)**

Parameter	USEPA Method	USEPA Method	USEPA Method		Method Description
	Soil	Aqueous	Soil	Aqueous	
TCLP Parameters (continued)					
TCLP Pesticides	NA	UH13	NA	8080	GC
TCLP Herbicides	NA	UH14	NA	8180	GC
TCLP Metals (a)	NA	SS104JB01	NA	200.7/245.1	ICP/Cold Vapor AA

NS Analysis not scheduled for this matrix  
 NA Not applicable  
 ICP Inductively coupled plasma  
 GC/MS Gas chromatography/mass spectroscopy  
 GC/ECD Gas chromatography/electron capture detection  
 IC Ion chromatography  
 HPLC High pressure liquid chromatography  
 IR Infrared spectrometry  
 GFAA Graphite furnace atomic absorption  
 AA Atomic absorption  
 TCLP Toxicity Characteristic Leaching Procedure

(a) Arsenic and selenium will be reported as uncertified analytes, based on ICP quantitation.



Complete analytical results for this phase of work may be found in Appendix K. As discussed in Section 4.0, some of the USATHAMA certified reporting limits (CRLs) were not comparable to the USEPA SW-846 practical quantitation limits (PQLs). To solve this problem, the laboratory maintained a separate database and collected any instrument responses for the environmental samples and calculated the concentrations.

#### **C.1.2. Data Quality Assessment**

A comparison of the TEAD - N Suspected Release RFI Phase I Study analytical results to project data quality objectives (DQOs) as defined in the DCQAP formed the basis for evaluating the quality of the analytical data. As described in the DCQAP, analytical data must be of a known and acceptable quality in order to be used to evaluate site contamination at TEAD - N. Determination of data quality is based on evaluation of the precision, accuracy, representativeness, comparability, and completeness (PARCC) characteristics of the data. Once these characteristics have been evaluated, a determination may be made as to whether the data are appropriate for the intended uses in Phase 2. With the exception of a limited number of analytical results, TEAD - N RFI Phase I analytical results met the project DQOs and are appropriate for use in the contamination assessment without qualification. These exceptions, as discussed in the following sections, are limited in nature and do not result in substantial qualification of data. QC results discussed in the following sections are included in tabular form at the end of this appendix and labeled as individual appendices prefaced with a "C-".

**C.1.2.1. Precision.** Precision, the reproducibility of measurements under a given set of conditions, was evaluated based on the analysis of three different types of QC samples: duplicate laboratory control samples (LCS), duplicate field samples, and matrix spike and matrix spike duplicate (MS/MSD) samples. These three types of QC samples are discussed below.

**Laboratory Control Samples.** The first type of QC sample, duplicate spiked LCS samples, is required as part of the USATHAMA analytical program for all methods and provide ongoing information on the performance of each analytical method in a standard matrix. The results of these samples are compiled on control charts and submitted to the USATHAMA chemistry branch for approval before sample results may be loaded into the IRDMIS database. USATHAMA has reviewed and approved all duplicate LCS results related to the TEAD - N Suspected Release RFI Phase I Study.

**Duplicate Field Samples.** The second type of QC sample, duplicate field samples, is included as part of the TEAD-N RFI Phase I in order to obtain additional information on sampling and analytical precision. The field duplicates provide an indication of the overall precision since they measure field and laboratory precision. Sixty-seven duplicate samples were collected for soils, one duplicate sample was collected for groundwater sampling, and two duplicate samples were collected for surface water. No samples were qualified based on the results of these duplicate samples since the USEPA has no guidelines for this QC parameter. However, the amount of heterogeneity of the matrices is shown by the number of times the duplicate samples collected and calculated exceeded the selected control limits (based on USEPA acceptance limits for field replicate QC samples). Appendices C-1 and C-2 detail the field duplicates collected and the relative percent differences (RPDs) that were calculated for both soil and water matrices (only samples with concentrations greater than the certified reporting limit [CRL] have RPDs calculated for them). Blank spaces in the tables indicate that concentrations from both samples were below the CRL and an RPD could not be calculated. Appendix C-3 summarizes the number of times the field RPD was calculated for soil and water analytes as well as the number of times the field RPD exceeded the control limits.

The VOC soil field duplicate RPDs did not exceed the control limit of 30 percent for any of the field duplicate samples. Similarly, the single VOC water field duplicate RPD did not exceed the control limit of 30 percent.

The SVOC soil field duplicate RPDs exceeded the control limit of 30 percent twice, once for phenanthrene and once for naphthalene, both in sample EP-01-018 at 6.5 feet. These results do not affect the data quality, but do indicate matrix heterogeneity. The water field duplicate samples had no SVOC analytes above the CRL, and therefore no RPDs were calculated.

The organochlorine pesticide (OCP) soil field duplicate RPDs exceeded the control limit of 30 percent twice, once for (2,4-dichlorophenoxy)acetic acid (2,4-D) and once for dieldrin. 2,4-D had an RPD of 99 percent in sample SS-34-02 at 0.0 feet. Dieldrin had an RPD of 35 percent in sample SD-45-003 at 0.0 feet. These results do not affect the data quality, but do indicate matrix heterogeneity. The water field duplicate had no OCP analytes above the CRL, and therefore no RPD was calculated.

The explosives soil field duplicate RPDs exceeded the control limit of 30 percent 10 times as shown below:

<u>Compound</u>	<u>Calculated RPD</u>	<u>Sample Identification</u>
RDX	138%	EP-01-042 at 2.0 feet
	128%	EP-01-061 at 4.5 feet
	50%	EP-01-047 at 3.0 feet
	40%	EP-01-051 at 2.5 feet
	82%	EP-01-059 at 0.0 feet
2,6-DNT	66%	EP-01-059 at 0.0 feet
1,3,5-TNB	65%	EP-01-059 at 0.0 feet
2,4,6-TNT	50%	EP-01-059 at 0.0 feet
	88%	EP-01-061 at 0.0 feet

As noted above, sample EP-01-059 at 0.0 feet had RPDs that exceeded the control limit of 30 percent for four compounds. Sample EP-01-061 at 0.0 feet had RPDs that exceeded the control limit of 30 percent for RDX and 2,4,6-TNT. These results do not affect the data quality, but do indicate matrix heterogeneity. The water field duplicates had no explosive analytes above the CRL, and therefore no RPDs were calculated.

The dioxin/furan soil field duplicate RPDs exceeded the control limit of 30 percent once for heptachlorodibenzofuran in sample SS-20-012 at 0.0 feet. These results do not affect the data quality, but do indicate matrix homogeneity. Dioxins and furans were not analyzed in the groundwater or surface water duplicate samples.

The metals soil field duplicate RPDs exceeded the control limit of 30 percent frequently, as shown in Appendix C-3. The metals with the highest percent of RPDs exceeding control limits (by a large percentage) are listed below:

- Antimony ( 3 out of 5 times)
- Silver (12 out of 18 times)
- Thallium ( 4 out of 8 times)
- Lead (21 out of 59 times)
- Beryllium (7 out of 19 times)

The water field duplicates exceeded the control limit of 30 percent only once for selenium with an RPD of 39 percent in well B-1. These results do not affect the data quality, but do indicate matrix heterogeneity.

The cyanide soil field duplicate RPDs exceeded the control limit of 30 percent four times, occurring once in each of the following samples: EP-01-046 at 3 feet with an RPD of 77 percent; sample SB-29-028 at 4.0 feet with an RPD of 39 percent, sample EP-01-059 at 0.0 feet with an RPD of 84 percent, and sample SS-04-005 at 0.0 feet with an RPD of 83 percent. These results do not affect the data quality, but do indicate matrix heterogeneity. The water field duplicates had no cyanide above the CRL, and therefore no RPD was calculated.

Anion soil field duplicate RPDs exceeded the control limit of 30 percent 17 times for phosphate, four times for chloride, and five times for nitrite plus nitrate. The water field duplicate RPDs were below the control limit of 30 percent for all anions except nitrite plus nitrate in sample SW-14-001 at 0.0 feet with an RPD of 59 percent. These results do not affect the data quality, but do indicate matrix heterogeneity.

The total recoverable petroleum hydrocarbons (TRPH) soil field duplicates exceeded the control limit of 30 percent two times. These results do not affect the data quality, but do indicate matrix heterogeneity. TRPH was not analyzed for in the groundwater or surface water duplicate samples. The remaining miscellaneous parameters are not discussed here, but are listed in Appendices C-1 through C-3.

Matrix Spike/Matrix Spike Duplicate Samples. The third type of QC used to assess the precision of the data was the RPDs of the MS/MSD samples. These duplicate results have much less variability than the field duplicates; thus they aid in detecting any systematic problems in an analysis. These analyses also helped determine how well the target analytes could be recovered from environmental matrices, identifying a matrix effect. Appendices C-4 and C-5 detail the results of the soil and water RPDs calculated based on the MS/MSD samples. A summary of the MS/MSD RPD nonconformances follows.

The VOC soil MS/MSD samples exceeded the control limits eight times. These nonconformances are shown below by spiking compound, control limit (in parentheses), calculated RPD, and associated spiked sample.

<u>Spiking Compound</u>	<u>RPD</u>	<u>Spiked Sample</u>
Benzene (21%)	26%	SB-29-013 at 3.0 feet
	24%	SS-26-035 at 0.0 feet
Chlorobenzene (21%)	26%	SB-29-013 at 3.0 feet
	23%	SS-27-006 at 0.0 feet
Toluene (21%)	23%	SS-27-006 at 0.0 feet

The results for the above samples are qualified as estimated for all detectable concentrations due to these nonconformances. All the water samples had acceptable MS/MSD RPDs.

The SVOC soil MS/MSD samples exceeded their various control limits a total of 16 times; these nonconformances are summarized below by spiking compound, control limit (in parentheses), calculated RPD, and associated spiked sample.

<u>Spiking Compound</u>	<u>RPD</u>	<u>Spiked Sample</u>
4-Chloro-3-methylphenol (33%)	85%	SB-26-012 at 1.0 feet
	61%	SD-45-001 at 0.0 feet
1,4-Dichlorobenzene (27%)	65%	SB-26-012 at 1.0 feet
2,4-Dinitrotoluene (47%)	89%	EP-01-018 at 6.5 feet
	200%	SB-29-015 at 0.0 feet
	200%	SB-26-012 at 1.0 feet
	110%	EP-01-088 at 0.0 feet
	130%	SS-37-001 at 0.0 feet
N-nitroso-di-n-propylamine (38%)	67%	SB-26-012 at 1.0 feet
Pentachlorophenol (47%)	52%	SS-19-004 at 0.0 feet
Phenol (35%)	61%	SB-26-012 at 1.0 feet
Pyrene (36%)	57%	SB-26-012 at 1.0 feet
1,2,4-Trichlorobenzene (23%)	61%	SB-26-012 at 1.0 feet
2-Chlorophenol (50%)	63%	SB-26-012 at 1.0 feet
Acenaphthene (19%)	57%	SB-26-012 at 1.0 feet

The above samples will be qualified as estimated for all detectable concentrations due to these nonconformances. All the water samples had acceptable MS/MSD RPDs.

The OCP soil MS/MSD RPDs exceeded the control limits a total of 10 times, these nonconformances are summarized below by spiking compound, control limit (in parentheses), calculated RPD, and associated spiked sample.

<u>Spiking Compound</u>	<u>RPD</u>	<u>Spiked Sample</u>
a-Endosulfan (20%)	51%	SD-45-001 at 0.0 feet
	27%	SS-34-006 at 0.0 feet

b-Bromonitro (50%)	50%	SS-34-003 at 0.0 feet
	67%	SD-45-001 at 0.0 feet
Isodrin (20%)	20%	SS-34-006 at 0.0 feet
DDT (20%)	100%	SS-39-007 at 0.0 feet
	27%	SD-45-001 at 0.0 feet

These samples are qualified as estimated for all detectable concentrations due to these nonconformances. All the water samples had acceptable MS/MSD RPDs.

Since there were no TEAD - N site specific MS/MSD samples analyzed with the six herbicide samples, evaluations were based on the acceptable LCS samples.

The explosives soil MS/MSD RPDs exceeded the control limits twice. These nonconformances are summarized below by the spiking compound, control limit (in parentheses), calculated RPD, and associated spiked sample.

<u>Spiking Compound</u>	<u>RPD</u>	<u>Spiked Sample</u>
1,3,5-TNB (25%)	28%	EP-01-001 at 2.0 feet
RDX (18%)	30%	EP-01-024 at 0.0 feet

The above samples are qualified as estimated for all detectable concentrations due to these nonconformances. The water samples had acceptable MS/MSD RPDs.

The TRPH MS/MSD RPDs were acceptable for all soil samples. No water samples were analyzed for TRPH.

The metals soil MS/MSD RPDs had variable acceptability dependent upon the metal. The control limits for graphite furnace atomic absorption (GFAA) metals were 20 percent for arsenic, selenium, and lead. Mercury by cold vapor atomic absorption had a control limit of 10 percent. The remaining metals were analyzed by inductively coupled plasma atomic absorption using a control limit of 25 percent.

Listed below are the spiked samples that had recoveries outside the acceptable limits for the indicated metal. The samples listed are ones that were outside the control limits by more than 10 percentage points, indicating a gross deviation from the limit. The samples below are qualified as estimated for any detectable concentrations due to these nonconformances.

• Arsenic:	EP-01-045 at 3.5 feet	EP-01-054 at 2.0 feet
	EP-01-057 at 4.5 feet	SB-42-008 at 0.0 feet
	SS-26-035 at 0.0 feet	SS-28-001 at 0.0 feet
	SS-26-034 at 0.0 feet	
• Selenium:	EP-01-045 at 3.5 feet	SB-29-014 at 3.0 feet
	SB-29-010 at 4.0 feet	SB-29-021 at 0.0 feet
• Lead (GFAA):	EP-01-057 at 4.5 feet	EP-01-054 at 2.0 feet
	EP-01-056 at 2.0 feet	SB-01-001 at 5.0 feet
	SS-01-002 at 0.0 feet	SS-19-010 at 0.0 feet
	SS-37-010 at 0.0 feet	SB-29-010 at 4.0 feet
	SB-29-021 at 0.0 feet	
• Antimony	EP-01-018 at 6.5 feet	SB-42-003 at 0.0 feet
• Cadmium	EP-01-072 at 0.0 feet	
• Chromium	EP-01-005 at 7.0 feet	
• Copper	EP-01-029 at 5.0 feet	EP-01-035 at 0.5 feet
	EP-01-042 at 2.0 feet	EP-01-072 at 0.0 feet
	EP-01-057 at 0.0 feet	SB-42-003 at 0.0 feet
	EP-01-096 at 3.5 feet	
• Lead (ICP)	EP-01-005 at 7.0 feet	EP-01-018 at 6.5 feet
	EP-01-064 at 0.5 feet	EP-01-057 at 0.0 feet
	SB-42-008 at 0.0 feet	SB-42-003 at 0.0 feet
• Nickel	EP-01-018 at 6.5 feet	EP-01-096 at 3.5 feet
• Silver	EP-01-018 at 6.5 feet	SB-42-003 at 0.0 feet
• Zinc	EP-01-005 at 7.0 feet	EP-01-015 at 3.5 feet
	EP-01-029 at 5.0 feet	EP-01-054 at 2.0 feet
	SB-42-003 at 0.0 feet	SS-34-002 at 0.0 feet
	SS-28-001 at 0.0 feet	

The metals water MS/MSD RPDs were acceptable except for one of each of the following analytes: calcium, sodium, and zinc. The RPDs for calcium and sodium were above the control limit of 15 percent by two percentage points and will not affect the data quality. The RPD for zinc was above the control limit of 15 percent by five percent and will have a very minimal effect on the data; therefore qualification is not necessary.

The cyanide soil MS/MSDs exceeded the 20 percent RPD control limit once in spiked sample EP-01-106 at 6.0 feet. This sample was associated with three other pairs of MS/MSD samples. However, the other MS/MSD samples all had acceptable RPDs, so this single

nonconformance had a limited effect on this sample and will not require qualification. All the water samples had acceptable cyanide MS/MSD RPDs.

The anions MS/MSD RPDs in soil exceeded the control limits a total of 15 times; these nonconformances are summarized below by anion, control limit (in parentheses), calculated RPD, and associated spiked sample.

<u>Anion</u>	<u>RPD</u>	<u>Spiked Sample</u>
Nitrite+Nitrate (10%)	123%	EP-01-011 at 3.0 feet
	16%	EP-01-035 at 6.0 feet
	15%	SS-21-010 at 0.0 feet
	20%	SB-01-008 at 60.0 feet
Chloride (20%)	138%	SB-01-004 at 5.0 feet
	257%	SB-01-005 at 25.0 feet
	29%	SB-01-006 at 60.0 feet
Phosphate (20%)	36%	EP-01-007 at 3.0 feet
	37%	EP-01-042 at 2.0 feet
	55%	EP-01-074 at 2.5 feet
	180%	EP-01-088 at 0.0 feet
	24%	SS-19-001 at 0.0 feet
	27%	SB-01-003 at 25.0 feet
	565%	EP-01-098 at 0.0 feet

The anion concentrations in the 14 samples listed above are qualified as estimated for all detectable concentrations due to these nonconformances. All the water samples had acceptable anion MS/MSD RPDs.

**C.1.2.2. Accuracy.** Accuracy, or the bias in a measurement system, is measured by determining the nearness of a data set to the true value. Accuracy for this project was evaluated based on laboratory control samples, surrogate compounds, and field samples spiked with target compounds (MS/MSD). Each type of spiked sample provided different information on the accuracy of the measurement system.

**Laboratory Control Samples.** LCSs were used as the primary control of accuracy in the laboratory system. As discussed in Section C.1.2.1, laboratory control sample results met project and USATHAMA requirements. Therefore, the results of these samples are not discussed in this report.



**Surrogate Compounds.** Surrogate compounds spiked into field samples provide information of the efficiency of all steps of a gas chromatography (GC) and gas chromatography/mass spectrometer (GC/MS) method in recovering these compounds from the individual environmental sample matrices. In the USATHAMA analytical program, surrogate recoveries are not used to determine if an analytical method is in control; instead they are used to obtain information on possible sample matrix effects. Surrogates, since they were spiked into every environmental sample, were the primary tool used to determine if matrix interference was present during the analysis of organic compounds. Therefore, surrogates will be the primary source for accuracy evaluation and data qualification. Appendices C-6 and C-7 detail the surrogates that are outside the established control limits. These tables are arranged by the analysis type and then by sample. Those surrogates that had gross deviations from the established recoveries are discussed here.

The GC/MS method used to analyze VOCs employs three surrogates: 1,2-dichloroethane-d4, 4-bromofluorobenzene, and toluene-d8. A total of 293 soil samples were analyzed for VOCs and the frequency that these surrogates exceeded the control limits is shown below (control limits are in parentheses).

1,2-Dichloroethane-d4 (85-115%)	15
4-Bromofluorobenzene (80-120%)	10
Toluene-d8 (81-117%)	62

Eight samples had more than one VOC surrogate outside the recovery control limits. These samples are as follows:

EP-01-105 at 5.0 feet  
EP-01-016 at 8.0 feet  
EP-01-018 at 5.0 feet  
SS-04-005 at 0.0 feet  
SS-19-010 at 0.0 feet and its duplicate  
SB-26-007 at 0.0 feet  
SS-26-026 at 0.0 feet  
AC-38-001 at 0.0 feet

Most of the remaining surrogate recoveries were marginally outside the limits by three or less percentage points. Three samples had surrogate recoveries that were significantly outside the control limits, these samples include: EP-01-018 at 6.5 feet, SB-26-015 at 1.0 feet,

and SB-26-001 at 0.0 feet. All these samples, except for the activated carbon sample (AC-38-001), are qualified as estimated for all detectable concentrations due to these nonconformances (Table C-2 in Section C.1.3 provides a detailed summary of which of the above samples had detectable concentrations and were qualified). Activated carbon is a very unique matrix and is not anticipated to behave in the same manner as the soil matrix, and therefore these limits may be too narrow. All the water samples had acceptable VOC surrogate recoveries.

The GC/MS method used to analyze SVOCs employs six surrogate compounds: 2,4,6-tribromophenol, 2-fluorobiphenyl, 2-fluorophenol, nitrobenzene-d5, phenol-d5, and terphenyl-d14. The SVOC compounds consist of base/neutral and acid extractable fractions. The SVOC surrogates provide information of the recovery of both fractions and allow for each fraction to be evaluated individually. A total of 275 soil samples was analyzed for SVOCs and the frequency that the surrogates exceeded the control limits is shown below (control limits are in parentheses) with the associated fraction defined.

<u>Surrogate</u>	<u>No. of Exceedences</u>	<u>Fraction</u>
2,4,6-Tribromophenol (20-140%)	62	Acid Surrogate
2-Fluorobiphenyl (30-115%)	2	Base/Neutral Surrogate
2-Fluorophenol (25-121%)	5	Acid Surrogate
Nitrobenzene-d5 (23-120%)	5	Base/Neutral Surrogate
Phenol-d5 (24-113%)	9	Acid Surrogate
Terphenyl-d14 (20-140%)	3	Base/Neutral Surrogate

As illustrated by the numbers above, the bulk of the surrogate recovery problem was in the acid fraction of the analyses. Ten samples had two or more of surrogates outside the recovery control limits, these samples are shown below with the recovery bias and affected fraction.

<u>Sample Identification</u>	<u>Fraction</u>	<u>Recovery Bias</u>	<u>Affected</u>
SS-20-001 at 0.0 feet and duplicate		Low	Acid
SB-26-003 at 1.0 feet		Low	Acid
SB-29-023 at 2.0 feet		Low	Acid
SS-37-010 at 0.0 feet		Low	Acid
AC-38-001 at 0.0 feet		Low	Both
SB-45-001 at 0.0 feet		Low	Acid

SD-45-002 at 0.0 feet	Low	Both
SD-45-004 at 0.0 feet	Three Low/One High	Both
SD-45-005 at 0.0 feet	Three Low/One High	Both
SD-45-006 at 0.0 feet and duplicate	Low	Acid

The samples listed above, except for the activated carbon sample (AC-38-001), will be qualified as estimated for all detectable concentrations due to these nonconformances. Activated carbon is a very unique matrix and is not anticipated to behave in the same manner as the soil matrix, and therefore these limits may be too narrow.

Approximately half of the SVOC surrogate compounds listed in Appendix C-7 had zero percent recoveries due to the noted dilution which effectively diluted the surrogate out of the quantitation range. The remaining surrogate exceedances occurred on distinct samples and exhibit limited matrix effects, these results do not affect the data quality since only one of six surrogates was outside the control limits (Functional Guidelines [USEPA, 1988] do not suggest qualification when only one SVOC surrogate is not within limits). Section C.1.3 provides a detailed summary of which samples had detectable concentrations and were qualified. All the SVOC water surrogates had acceptable recoveries.

The GC analysis of OCPs utilizes two surrogates during the analysis of environmental samples: decachlorobiphenyl (DCB) as the primary surrogate and tetrachloro-meta-xylene (TCMX) as the secondary surrogate. Note: the TCMX surrogate is used when the primary surrogate has low recovery or significant interferences.

Eighty-six soil samples were analyzed for OCPs, with 12 occurrences of the surrogates exceeding the control limits (60-120% for DCB and 67-119% for TCMX). In one instance the secondary surrogate had to be used for evaluation. The majority of these exceedances were below the lower control limit, indicating a low response that is probably due to the number of dilutions required for quantitation. None of these samples require qualification. All of the water samples had acceptable surrogate recoveries.

Matrix Spike/Matrix Spike Duplicate Samples. The final type of QC parameter used to assess accuracy in almost all methods was field samples spiked with target analytes (MS/MSD samples). The laboratory randomly selected five percent of the field samples to be spiked as MS/MSD samples. The information gathered was used to assess the effect of the matrix on sample recovery. In general, individual spike recoveries for samples were within recovery objectives presented for more than 85 percent of the spiked samples.

Organic compounds are not qualified based on the results of the MS/MSD samples. The surrogates which were spiked into each individual sample have provided the primary criteria for evaluation as discussed in the previous section. For the inorganic analyses, MS/MSD sample results will only be used to evaluate the individual spiked sample. As determined from the evaluation of the duplicate field samples in Section C.1.2.1, there is a large degree of variability and heterogeneity at TEAD - N, so a direct relationship between one sample and the remaining samples in a lot would not be accurate. Therefore, if any nonconformances are found during the review of the inorganic parameters only the single spiked sample will be qualified. Appendices C-8 and C-9 list the recoveries for all the spiking compounds for each group of analyses. A summary of the number of out-of-control circumstances is described below.

The VOC analysis employs five spiking compounds. During the analysis of soil and water samples none of these compounds were outside the control limits.

The SVOC analysis employs 11 spiking compounds. During analyses of soil samples eight of these compounds were outside the various MS/MSD recovery control limits a total of 99 times. Those nonconformances that were outside the control limits by a wide margin (plus or minus 10 percentage points) are summarized below by spiking compound, control limit (in parentheses), recovery, and associated spiked sample.

<u>Spiking Compound</u>	<u>Recovery</u>	<u>Spiked Sample</u>
4-chloro-3-methylphenol (26-103%)	120%/120%	SS-04-005 at 0.0 feet
1,4-dichlorobenzene (28-104%)	120%/120%	SS-04-005 at 0.0 feet
2,4-dinitrotoluene (28-89%)	6%/14%	EP-01-018 at 6.5 feet
	15%/0%	SB-29-015 at 0.0 feet
	17%/23%	SB-29-024 at 0.0 feet
	0%	SB-26-012 at 1.0 feet
	91%	EP-01-071 at 2.5 feet
	0%/0%	SD-45-001 at 0.0 feet
	170%/550%	EP-01-088 at 0.0 feet
	0%/0%	SS-20-008 at 0.0 feet
	6%	SS-37-001 at 0.0 feet
	350%/270%	SS-21-004 at 0.0 feet
	0%/0%	SD-47-002 at 0.0 feet
	110%/100%	SS-04-005 at 0.0 feet

<u>Spiking Compound</u>	<u>Recovery</u>	<u>Spiked Sample</u>
4-nitrophenol (11-114%)	100%/100%	EP-01-111 at 3.5 feet
	0%/0%	SB-29-015 at 0.0 feet
	0%/0%	SB-29-024 at 0.0 feet
	0%/0%	SB-26-012 at 1.0 feet
	0%/0%	SS-26-034 at 0.0 feet
	0%/0%	SD-45-001 at 0.0 feet
	0%/0%	SS-20-008 at 0.0 feet
	0%/0%	SS-37-001 at 0.0 feet
	140%	SS-21-004 at 0.0 feet
	0%/0%	SS-28-003 at 0.0 feet
	0%/0%	SD-47-002 at 0.0 feet
	0%/0%	SS-28-006 at 0.0 feet
	0%/0%	EP-01-096 at 3.5 feet
	150%/140%	SS-04-005 at 0.0 feet
N-nitroso-di-n-propylamine (41-126%)	28%	SB-26-012 at 1.0 feet
	33%	SD-45-001 at 0.0 feet
Pentachlorophenol (17-109%)	0%/0%	SB-29-015 at 0.0 feet
	0%/0%	SB-29-024 at 0.0 feet
	0%/0%	SB-26-012 at 1.0 feet
	0%/0%	SS-26-034 at 0.0 feet
	3%6%	SS-19-004 at 0.0 feet
	0%/0%	SD-45-001 at 0.0 feet
	0%/0%	SS-20-008 at 0.0 feet
	0%/0%	SS-37-001 at 0.0 feet
	0%/0%	SS-28-003 at 0.0 feet
	0%/0%	SD-47-002 at 0.0 feet
	170%/170%	SS-04-005 at 0.0 feet
	0%/0%	SS-28-006 at 0.0 feet
	0%/0%	EP-01-096 at 3.5 feet
	120%/120%	SS-04-005 at 0.0 feet
Phenol (26-90%)	130%	SS-37-001 at 0.0 feet
2-chlorophenol (25-102%)	120%/120%	SS-04-005 at 0.0 feet

The soil samples listed above are not qualified based on the MS/MSD recovery nonconformances. The surrogate recoveries were evaluated instead to serve as the basis for any necessary qualification.

SVOC water samples had two of the 11 spiking compounds outside the MS/MSD recovery control limits a total of four times. These nonconformances are summarized below by spiking compound, control limit (in parentheses), recovery, and the associated spiked sample.

<u>Spiking Compound</u>	<u>Recovery</u>	<u>Spiked Sample</u>
2,4-dinitrotoluene (24-96%)	100%/96%	SW-45-002
Pentachlorophenol (9-103%)	107%/106%	SW-45-002

This sample will not be qualified since the recoveries are only narrowly outside the limits.

The OCP analysis employs 10 spiking compounds. During analyses of soil samples all of these compounds were outside the various MS/MSD recovery control limits a total of 41 times. The nonconformances that were outside the control limits by a wide margin (plus or minus 10 percentage points) are summarized below by spiking compound, control limit (in parentheses), recovery, and associated spiked sample.

<u>Spiking Compound</u>	<u>Recovery</u>	<u>Spiked Sample</u>
Methoxychlor (80-120%)	0%/0%	SB-29-031 at 0.0 feet
	132%	SD-45-001 at 0.0 feet
	214%/247%	SS-34-006 at 0.0 feet
Endosulfan A (45-150%)	0%/0%	SB-29-031 at 0.0 feet
Endosulfan B (20-200%)	0%/0%	SB-29-031 at 0.0 feet
	9%/5%	SD-45-001 at 0.0 feet
Endrin (30-150%)	0%/0%	SB-29-031 at 0.0 feet
	-156%/-317%	SS-34-006 at 0.0 feet
Heptachlor (35-110%)	124%/128%	SB-29-023 at 0.0 feet
	0%/0%	SB-29-031 at 0.0 feet
	118%/127%/113%	SD-45-001 at 0.0 feet
Isodrin (80-120%)	127%/122%	SS-34-006 at 0.0 feet
	0%/0%	SB-29-031 at 0.0 feet
	72%	SD-45-001 at 0.0 feet
Aldrin (42-122%)	66%	SS-34-006 at 0.0 feet
	0%/0%	SB-29-031 at 0.0 feet
g-BHC (20-140%)	0%/0%	SB-29-031 at 0.0 feet

DDT (25-160%)	337%	SB-29-007 at 0.0 feet
	0%/0%	SB-29-031 at 0.0 feet
	-901%/-97%	SS-34-006 at 0.0 feet
Dieldrin (40-140%)	0%/0%	SB-29-031 at 0.0 feet

Sample SB-29-031 at 0.0 feet had 0 percent recovery because it was not spiked. The analyst inadvertently spiked the sample with surrogate standards twice. All of the soil samples listed above are not qualified based on the MS/MSD recovery nonconformances. The surrogate recoveries were the basis for any necessary qualification.

The water samples all had acceptable OCP MS/MSD recoveries.

The explosives analysis employs six spiking compounds. During the analysis of soil samples four of these compounds were outside the MS/MSD recovery control limits 20 times. The samples that were outside the control limits by a wide margin (plus or minus 10 percentage points) are summarized below by spiking compound, control limit (in parentheses), recovery, and associated spiked sample.

<u>Spiking Compound</u>	<u>Recovery</u>	<u>Spiked Sample</u>
2,4-DNT (68-106%)	57%/51%	SS-19-010 at 0.0 feet
	55%/53%	SD-45-002 at 0.0 feet
	56%/52%	SS-21-007 at 0.0 feet
RDX (71-107%)	148%/109%	EP-01-024 at 0.0 feet
2,4,6-TNT (72-118%)	60%/55%	SS-19-010 at 0.0 feet
	60%/57%	SD-45-002 at 0.0 feet
	56%/52%	SS-21-007 at 0.0 feet

These soil samples will be qualified as estimated for all detectable concentrations due to the recovery nonconformances since surrogate recovery data were not available. However, only sample EP-01-024 at 0.0 feet requires qualification since it is the only one that had any detectable concentration.

All the explosive water samples had acceptable MS/MSD recoveries.

The MS/MSD spike recoveries for every metal analyzed in soil had some recoveries outside the 80 to 120 (for GFAA metals) and 75 to 125 (for Inductively Coupled Plasma Atomic Absorption [ICP] metals) percent acceptance limits, but most were low. One metal, selenium, was consistently outside (82 percent), while the others varied from 3 to 56 percent.

Selenium, arsenic, antimony, and mercury are typically difficult to recover and are subject to interference. These low recoveries indicate that a matrix effect may be present. Since the laboratory control samples did not indicate a problem with the metals analyses, the actual concentrations may be higher than reported due to this low recovery.

Listed below is a subset of all the spiked samples that had recoveries outside the acceptable limits. The samples shown had detectable concentrations of the specified metal and were outside the control limits by more than 10 percentage points, indicating a gross deviation. These samples are qualified as estimated (with the exception of AC-38-001 which has a very unique matrix) since these nonconformances indicate a low bias. The number in parentheses is the total number of nonconforming recoveries.

#### GEAA Metals

- **Arsenic (16):** EP-01-001 at 2.0 feet      EP-01-003 at 2.0 feet  
                          EP-01-067 at 4.5 feet      EP-01-072 at 0.0 feet  
                          EP-01-045 at 3.5 feet      EP-01-054 at 2.0 feet  
                          EP-01-118 at 2.0 feet      EP-01-118 at 5.5 feet  
                          SS-26-035 at 0.0 feet      SS-28-001 at 0.0 feet  
                          SB-29-014 at 3.0 feet duplicate      SS-34-002 at 0.0 feet  
                          AC-38-001 at 0.0 feet duplicate      SB-42-008 at 0.0 feet  
                          SB-45-001 at 9.0 feet
- **Selenium (34):** EP-01-029 at 5.0 feet      SS-26-034 at 0.0 feet  
                          AC-38-001 at 0.0 feet
- **Lead (12):** EP-01-054 at 2.0 feet      SB-01-001 at 5.0 feet  
                          EP-01-121 at 9.0 feet      SS-01-002 at 0.0 feet  
                          SS-19-010 at 0.0 feet      SB-29-014 at 3.0 feet  
                          SB-29-010 at 4.0 feet      SB-29-021 at 0.0 feet  
                          SS-37-010 at 0.0 feet      SB-45-001 at 9.0 feet  
                          SB-BK-001 at 0.0 feet      EP-01-067 at 4.5 feet

#### Cold Vapor Atomic Absorption Metals

- **Mercury (10):** SD-14-002 at 0.0 feet



•	<b>Antimony (20):</b>	EP-01-018 at 6.5 feet SB-42-008 at 0.0 feet	EP-01-118 at 0.0 feet SB-42-003 at 0.0 feet
•	<b>Cadmium (4):</b>	EP-01-067 at 4.5 feet SB-29-015 at 0.0 feet	EP-01-072 at 0.0 feet
•	<b>Chromium (4):</b>	EP-01-005 at 7.0 feet EP-01-042 at 2.0 feet	EP-01-015 at 3.5 feet SB-29-015 at 0.0 feet
•	<b>Cobalt (2):</b>	EP-01-042 at 2.0 feet	SB-29-015 at 0.0 feet
•	<b>Copper (14):</b>	EP-01-067 at 4.5 feet EP-01-018 at 6.5 feet EP-01-045 at 3.5 feet EP-01-064 at 0.5 feet EP-01-096 at 3.5 feet SS-26-034 at 0.0 feet SB-42-008 at 0.0 feet	EP-01-072 at 0.0 feet EP-01-029 at 5.0 feet EP-01-042 at 2.0 feet EP-01-067 at 0.0 feet EP-01-115 at 9.5 feet SB-29-015 at 0.0 feet SB-42-003 at 0.0 feet
•	<b>Lead (16)</b>	EP-01-067 at 4.5 feet EP-01-018 at 6.5 feet EP-01-042 at 2.0 feet EP-01-067 at 0.0 feet EP-01-118 at 5.5 feet SS-26-034 at 0.0 feet SB-29-015 at 0.0 feet SB-42-003 at 0.0 feet	EP-01-072 at 0.0 feet EP-01-029 at 5.0 feet EP-01-064 at 0.5 feet EP-01-118 at 0.0 feet SS-26-035 at 0.0 feet SS-28-001 at 0.0 feet SB-42-008 at 0.0 feet SB-45-001 at 9.0 feet
•	<b>Nickel (3):</b>	EP-01-018 at 6.5 feet SB-29-015 at 0.0 feet	EP-01-042 at 2.0 feet
•	<b>Silver (5):</b>	EP-01-018 at 6.5 feet EP-01-118 at 0.0 feet	EP-01-042 at 2.0 feet SB-42-003 at 0.0 feet
•	<b>Thallium (2):</b>	No detectable concentrations	

- **Vanadium (2):** EP-01-042 at 2.0 feet      SB-29-015 at 0.0 feet
  
- **Zinc (14):**

EP-01-005 at 7.0 feet	EP-01-015 at 3.5 feet
EP-01-072 at 0.0 feet	EP-01-018 at 6.5 feet
EP-01-029 at 5.0 feet	EP-01-045 at 3.5 feet
EP-01-054 at 2.0 feet	EP-01-042 at 2.0 feet
SS-26-035 at 0.0 feet	SS-28-001 at 0.0 feet
SB-29-015 at 0.0 feet	SS-34-002 at 0.0 feet
AC-38-001 at 0.0 feet	SB-42-003 at 0.0 feet

During the water sampling effort four metals (selenium, lead, mercury, and zinc) and three cations (calcium, magnesium, and sodium) were outside their various MS/MSD recovery control limits. The lead, mercury, and magnesium recoveries were only marginally outside the limits and, since there were no detectable selenium concentrations, no qualification is required. The remaining analytes in samples B-1 and SW-14-001 (calcium, sodium, and zinc) will be qualified as estimated due to large MS/MSD recovery nonconformances.

There was only one low MS/MSD recovery for all the soil cyanide analyses. This occurred in sample EP-01-013 at 4.5 feet. This sample had five other acceptable spike recoveries; therefore, the impact of this single nonconformance is very limited and no qualification is required. The cyanide water analyses also had a single nonconforming MS/MSD recovery in sample SW-47-001. The recovery was 138 percent and the upper limit on the control is 115 percent. There was no detectable concentration of cyanide in this sample, and therefore no qualification is needed.

The soil anions MS/MSD recoveries were generally acceptable except for the samples listed below for the specified anions.

- **Nitrite plus Nitrate:** EP-01-011 at 3.0 feet      SS-21-005 at 0.0 feet
  
- **Sulfate:** EP-01-016 at 4.5 feet
  
- **Chloride:**

EP-01-011 at 3.0 feet	EP-01-016 at 4.5 feet
EP-01-023 at 5.5 feet	SB-01-004 at 5.0 feet
SB-01-005 at 25.0 feet	SB-01-006 at 60.0 feet

- |            |                        |                                 |
|------------|------------------------|---------------------------------|
| Phosphate: | EP-01-042 at 2.0 feet  | EP-01-074 at 2.5 feet           |
|            | EP-01-088 at 0.0 feet  | EP-01-084 at 0.5 feet duplicate |
|            | SS-19-001 at 0.0 feet  | SS-19-010 at 0.0 feet duplicate |
|            | SB-01-003 at 25.0 feet | SS-21-010 at 0.0 feet           |
|            | EP-01-097 at 0.0 feet  | EP-01-098 at 0.0 feet           |

All the samples listed above had detectable concentrations of the specified anion except for the sulfate sample (EP-01-016 at 4.5 feet) and the first phosphate sample listed (EP-01-042 at 2.0 feet). The remaining samples will be qualified as estimated due to these MS/MSD recovery nonconformances.

All the water samples had acceptable MS/MSD recoveries for the anion analyses.

**C.1.2.3. Representativeness.** This objective expresses how well data represent the characteristics of a population, parameter variations, or environmental conditions. Representativeness was evaluated by the analysis of method blanks, trip blanks, source water samples, equipment rinsate blanks, and filter blanks. The results of these samples are discussed below.

**Method Blanks.** A single method blank is run with every USATHAMA lot to provide a measure of contamination derived from laboratory equipment and reagents. USATHAMA lots are analysis dependent, which means that the same samples are not always grouped together for each analysis. The size of the lot is dependent upon the laboratory performing the analyses, since the size is set by the number of samples that the laboratory can process through the rate-limiting step of each method in one 24-hour period. USATHAMA sets 75 as the maximum number of samples that may be included in a lot. The discussions below identify which lots had method blank concentrations above the CRL and which samples in these lots were affected. Additionally, this information is summarized in Appendices C-10 through C-13 which detail the method blanks that were contaminated and the samples associated with each of those blanks. The method blank results for both soil and groundwater were generally below the CRLs with the exceptions itemized below:

- Two soil lots had method blanks with concentrations of acetone (a VOC) above the CRL of 0.017  $\mu\text{g/g}$ . Lot YSN had a concentration of 0.020  $\mu\text{g/g}$  and lot ZTB had a

concentration of 0.040  $\mu\text{g/g}$ . There were no samples in either lot that had concentrations of acetone above the CRL.

- Three soil lots had method blanks with concentrations of trichlorofluoro-methane (a VOC) above the CRL of 0.00590  $\mu\text{g/g}$ . Lot ZTA had a concentration of 0.01000  $\mu\text{g/g}$ , lot AJB had a concentration of 0.00600  $\mu\text{g/g}$ , and lot AJC had a concentration of 0.00800  $\mu\text{g/g}$ . In lots AJB and AJC, no samples had concentrations of trichlorofluoromethane above the CRL. In lot ZTA, one sample had a trichlorofluoromethane concentration above the CRL. This sample, SB-26-011 at 1.0 feet, had 0.00813  $\mu\text{g/g}$  of trichlorofluoromethane and will be qualified as nondetect since it is less than five times the concentration detected in the method blank.
- Three soil lots had method blanks with concentrations of chloroform (a VOC) above the CRL of 0.00087  $\mu\text{g/g}$ . Lot YSV had a concentration of 0.00090  $\mu\text{g/g}$ , lot YSZ had a concentration of 0.00200  $\mu\text{g/g}$ , and lot ZTA had a concentration of 0.00100  $\mu\text{g/g}$ . There were no samples in any of these three lots that had detectable concentrations of chloroform.
- Water lot ZPL's method blank had a concentration of chloroform (a VOC) above the CRL of 0.50  $\mu\text{g/L}$ . The chloroform concentration in the method blank sample was 0.52  $\mu\text{g/L}$ . There was one sample in this lot, SW-47-001, that had a chloroform concentration of 1.00  $\mu\text{g/L}$ . This sample will be qualified as nondetect since its concentration is less than ten times that found in the method blank.
- Water lot ZRI's method blank had a concentration of bis(2-ethylhexyl)phthalate (an SVOC) above the CRL of 4.8  $\mu\text{g/g}$ . The method blank had a concentration of 6.6  $\mu\text{g/L}$ . The two samples in this lot require no qualification since this compound was not detected.
- One soil lot had a method blank concentration above the CRL for TRPH (21.0  $\mu\text{g/g}$ ). Lot ZOX had a TRPH concentration of 31.2  $\mu\text{g/g}$ . This lot includes 13 samples, eight of which were found to have TRPH concentrations above the CRL. The following seven samples will be qualified as nondetect since their TRPH concentrations are less than five times that of the associated method blank.

<u>Sample</u>	<u>Depth</u>	<u>Concentration</u>
SB-29-030	4.0	33.2 µg/L
SB-29-031	4.0	34.2 µg/L
SB-29-032	4.0	44.7 µg/L
SB-29-033	3.0	41.4 µg/L
SB-29-034	3.0	80.5 µg/L
SB-29-036	3.0	41.3 µg/L
SB-29-037	4.0	33.5 µg/L

- One soil lot had a method blank with concentrations of arsenic above the CRL of 0.250 µg/g. ZIZ had an arsenic concentration of 0.262 µg/g. All 34 samples in this lot had detectable concentrations of arsenic. Since these concentrations were all greater than five times the concentration found in the method blank, they do not require qualification.

**Trip Blanks.** Trip blanks, the second type of QC sample used to assess representativeness, provided information on possible VOC contamination of field samples during handling and shipment. Appendix C-14 lists the trip blanks collected and analyzed. Forty-nine trip blank samples were submitted with aqueous and soil field samples. The majority of the trip blanks had no detectable concentrations of VOCs present, however 11 trips blanks did. These trip blanks, detailed in Appendix C-14, are listed with the samples that accompanied them. The compound detected most frequently in was toluene. The dates associated with the contaminated trip blanks correspond to the time when the laboratory was undergoing construction (painting of some type). Since this problem only occurred during this time frame, it appears to be caused by laboratory contamination. Only three samples from the July 21, 1992 shipment require qualification due to this situation: SS-04-001 at 0.0 feet, SS-04-002 at 0.0 feet, and SS-04-003 at 0.0 feet will all be qualified as nondetect for toluene due to this nonconformance.

**Source Water Samples.** The source water samples, the third type of QC used to assess representativeness, provided information on the water used to decontaminate the sample collection devices. Duplicate source water samples were taken from water well 3 (WW-3) and analyzed for all analytes scheduled for environmental samples. These analyses were performed prior to the beginning of field work and all detectable concentrations of analytes are detailed in Appendix C-15. These results were used to determine the effectiveness of the decontamination procedures, which are discussed in the equipment rinse blank section below.

On July 30, 1992, lightning struck WW-3 and destroyed the pump. Due to this situation, water from well WW-2 was analyzed and used for steam cleaning and grout mixing purposes only. All the water used for equipment blank collection came from a reserve of WW-3 water.

Equipment Rinsate Blanks. Equipment rinsate blanks provided a measure of the cumulative contamination derived from the field sampling equipment, sample transit, storage, and analysis. The equipment rinsate blanks were analyzed for the same parameters as the associated samples. A total of 62 equipment rinsate blanks was collected. At the beginning of the field effort two teams were on site collecting samples and each team collected a rinsate blank daily. Approximately one-third of the way through the project, the collection frequency was reduced to one per day total, so the equipment blank collection was rotated between the two teams.

Samples were obtained by collecting purified deionized water that had been poured over or through a decontaminated sample collection device. Appendix C-16 lists the analytes that were found in the equipment rinsate blanks at concentrations above the CRL. This table also lists the samples collected prior to the rinsate blank and the analyte concentrations present in both. Analytes found in the source water were ignored during the evaluation of the samples preceding the rinsate blanks in order to provide a more precise measure of the decontamination process only.

Chloroform was found in two equipment rinsate blanks, but was not found in the preceding samples, indicating its presence is not the result of carry-over. Chloroform is a common field and laboratory contaminant and may be attributed to one of these sources. This nonconformance does not affect the data.

Bis(2-ethylhexyl)phthalate was detected in one equipment rinsate blank. It was not detected in the sample preceding the equipment rinsate blank, and therefore does not indicate a carry-over problem. This compound is a common laboratory contaminant and its presence does not impact the data.

Metals were detected in several equipment rinsate blanks. Those most frequently detected were lead, zinc, copper, iron, vanadium, selenium, and arsenic. In many cases, these metals were also detected in the sample preceding the rinsate blank, indicating the possibility of carry-over. The concentrations were low so the impact on the data is minimal and therefore no qualification is necessary.

**Filter Blanks.** The last type of QC sample, filter blanks, provided information on the inorganic contamination that derived from the filtration process. Appendix C-17 presents these results in tabular form. Four filter blanks were collected during this phase of work. Selenium was detected in all of the filter blanks at low levels. Zinc and lead were both detected twice and copper was detected once. These results have a very minimal impact on the data and require no sample qualification.

**C.1.2.4. Comparability.** The characteristic of comparability reflects the consistency of sample collection and handling procedures, analytical techniques, and expression of results in units consistent with other organizations reporting similar data. No changes to planned procedures were implemented that would affect data comparability. The use of USATHAMA protocols assists in assuring all data are comparable.

**C.1.2.5. Completeness.** The completeness measurement compares the amount of valid data obtained compared to the amount that was expected to be obtained under normal conditions. Two completeness objectives were established for this project: 100 percent for all background samples and 90 percent for all other types of samples.

The objectives for background and other field sample results were met. All data planned for collection regarding background samples were obtained. The completeness achieved for this project was 100 percent. All analyses for the TEAD - N Suspected Release RFI Phase I Study soil and water samples were performed within holding times.

A few changes occurred during the field effort that should be noted. These changes include the following:

- Nitroguanidine was originally an analyte of interest for this project. However, it was removed from the request list approximately one-third of the way through the program since it was not being detected and there was no historical record of its use on the site.
- A correction to the DCQAP was made approximately 3 weeks after sampling had begun to change the collection frequency of field duplicates from 5 percent to 10 percent.

- Another addition to the DOQAR occurred for DOWNEY 10. Seven additional analytes were added to those already planned.

### **C.1.3. Data Quality and RI Objectives**

This section is a summary of the data evaluation provided in the preceding section. The analytical data collected as part of the TEAD - N Suspected Release RFI Phase 1 Study is of a known and acceptable quality to be used to evaluate site contamination and potential risk to human health and the environment. A small percentage of the data is qualified due to either unforeseen or inherent problems with the measurement system. Table C-2 provides a summary of all the qualified samples, along with the compound or analytical group and a comment section describing the reason for the qualification. Some compounds could not be qualified based strictly on the QC results; these compounds include some phthalates, freons, hexane and chloroform. Each of these compounds is included on the table and preceded by an asterisk. The concentrations found were relatively low, isolated, and more indicative of contamination than true site conditions. These compounds are not recommended for inclusion in the contamination assessment based on the reviewer's professional judgment.



TABLE C-2

**SUMMARY OF DATA EVALUATION AND DATA ANOMALIES -  
CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT**

Sample	Depth (ft)	Compound	Comment
<b>SWMU NO. 1 Main Demolition Area</b>			
EP-01-005	7.0	Chromium, Zinc	Estimated due to MS/MSD re- covery nonconformances.
EP-01-007	3.0	Phosphate	Estimated due to MS/MSD RPD nonconformances.
EP-01-011	3.0	Nitrate+Nitrite	Estimated due to MS/MSD RPD nonconformances.
EP-01-015	3.5	Chromium, Zinc	Estimated due to MS/MSD re- covery nonconformances.
EP-01-018	5.0	VOCs	Estimated due to surrogate re- covery nonconformances.
EP-01-018	6.5	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
		Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
		Antimony, Nickel, Silver, Zinc	Estimated due to MS/MSD re- covery nonconformances.
		Lead	
EP-01-018 Dup	6.5	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
EP-01-024	0.0	Explosives	Estimated due to MS/MSD RPD nonconformances.
EP-01-029	5.0	Selenium, Zinc, Lead	Estimated due to MS/MSD re- covery nonconformances.
EP-01-035	6.0	Phosphate	Estimated due to MS/MSD RPD nonconformances.
EP-01-042	2.0	Phosphate	Estimated due to MS/MSD RPD nonconformances.
		Chromium, Cobalt, Nickel, Silver	Estimated due to MS/MSD re- covery nonconformances.
		Vanadium, Zinc, Lead	
EP-01-045	3.5	Zinc	Estimated due to MS/MSD re- covery nonconformances.
EP-01-054	2.0	Zinc, Lead	Estimated due to MS/MSD re- covery nonconformances.
EP-01-064	0.5	Lead	Estimated due to MS/MSD re- covery nonconformances.
EP-01-067	4.5	Cadmium, Lead	Estimated due to MS/MSD re- covery nonconformances.

TABLE C-2

**SUMMARY OF DATA EVALUATION AND DATA ANOMALIES -  
CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT  
(CONTINUED)**

Sample	Depth (ft)	Compound	Comment
<b>SWMU NO. 1 Main Demolition Area (continued)</b>			
EP-01-072	0.0	Cadmium, Zinc, Lead	Estimated due to MS/MSD re- covery nonconformances.
EP-01-074	2.5	Bis(2-ethylhexyl)phthalate Phosphate	*Common lab contaminant. Estimated due to MS/MSD RPD nonconformances.
EP-01-080	6.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
SB-01-001	5.0	Lead	Estimated due to MS/MSD re- covery nonconformances.
SB-01-003	25.0	Phosphate	Estimated due to MS/MSD RPD nonconformances.
SS-01-002	0.0	Lead	Estimated due to MS/MSD re- covery nonconformances.
<b>SWMU NO. 1A Cluster Bomb Area</b>			
SB-01-004	5.0	Chloride	Estimated due to MS/MSD RPD nonconformances.
<b>SWMU NO. 1B Burn pad Area</b>			
EP-01-098	0.0	Phosphate	Estimated due to MS/MSD RPD nonconformances.
EP-01-099	7.0	Tetrachloroethene	Detected as TIC by SVOC method, but not confirmed by VOX analysis.
SB-01-006	35.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
<b>SWMU NO. 1C Trash Burn Pits</b>			
EP-01-105	5.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
EP-01-106	6.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
EP-01-106	8.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.

TABLE C-2

**SUMMARY OF DATA EVALUATION AND DATA ANOMALIES -  
CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT  
(CONTINUED)**

Sample	Depth (ft)	Compound	Comment
<b>SWMU NO. 1C Trash Burn Pits (continued)</b>			
EP-01-107	1.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
EP-01-107	5.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
EP-01-108	5.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
EP-01-108	7.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
EP-01-112	5.5	Chloroform	Possible artifact from source water.
EP-01-118	0.0	Antimony, Silver, Lead	Estimated due to MS/MSD recovery nonconformances.
EP-01-118	5.5	Lead	Estimated due to MS/MSD recovery nonconformances.
EP-01-121	9.0	Lead	Estimated due to MS/MSD recovery nonconformances.
SB-01-008	60.0	Chloride, Nitrate+Nitrite	Estimated due to MS/MSD RPD nonconformances.
<b>SWMU NO. 1D Propellant Burn Pad</b>			
EP-01-087	0.0	Lead	Estimated due to MS/MSD recovery nonconformances.
EP-01-088	0.0	Di-n-butyl phthalate SVOCs	*Common lab contaminant. Estimated due to MS/MSD RPD nonconformances.
SB-01-005	25.0	Phosphate Chloride	Estimated due to MS/MSD RPD Estimated due to MS/MSD RPD nonconformances.
<b>SWMU NO. 4 Sandblast Area</b>			
SS-04-001	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
		Toluene Bis(2-ethylhexyl)phthalate	Qualified as ND due to trip blank. *Common lab contaminant.

TABLE C-2

**SUMMARY OF DATA EVALUATION AND DATA ANOMALIES -  
CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT  
(CONTINUED)**

Sample	Depth (ft)	Compound	Comment
<b>SWMU NO. 4 Sandblast Area (continued)</b>			
SS-04-002	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
		Toluene	Qualified as ND due to trip blank.
SS-04-003	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
		Toluene	Qualified as ND due to trip blank.
		Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
SS-04-004	0.0	1,1,2-Trichloro-1,2,2-trifluoroethane	*Freon - probable lab contaminant or refrigerant leak.
		Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
		Toluene	Qualified as ND due to trip blank.
		Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
		Di-n-butyl phthalate	*Common lab contaminant.
SS-04-005	0.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
SS-04-005 Dup	0.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
<b>SWMU NO. 14 Sewage Lagoons</b>			
SD-14-002	0.0	Mercury	Estimated due to MS/MSD re- covery nonconformances.
<b>SWMU NO. 19 AED Demilitarization Test Facility</b>			
SS-19-001	0.0	Phosphate	Estimated due to MS/MSD RPD nonconformances.
SS-19-003	0.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
		Di-n-butyl phthalate	*Common lab contaminant.
SS-19-009	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
SS-19-010	0.0	Lead	Estimated due to MS/MSD re- covery nonconformances.

**TABLE C-2**  
**SUMMARY OF DATA EVALUATION AND DATA ANOMALIES -**  
**CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT**  
**(CONTINUED)**

Sample	Depth (ft)	Compound	Comment
<b>SWMU NO. 19 AED Demilitarization Test Facility (continued)</b>			
SS-19-010 and dup	0.0	VOCs	Estimated due to surrogate re- covery nonconformances.
SS-19-010 Dup	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
SS-19-011	0.0	Di-n-butyl phthalate	*Common lab contaminant
<b>SWMU NO. 20 AED Deactivation Furnace Site</b>			
SS-20-011	0.0	Dimethyl phthalate	*Common lab contaminant
SS-20-015	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
		Toluene	*Lab artifact due to construction
SS-20-016	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
<b>SWMU NO. 21 AED Deactivation Furnace Building</b>			
SS-21-002	0.0	Toluene	Qualified as ND due to trip blank.
		Di-n-butyl phthalate	*Common lab contaminant.
SS-21-003	0.0	Di-n-butyl phthalate	*Common lab contaminant.
SS-21-005	0.0	Toluene	Qualified as ND due to trip blank.
SS-21-006	0.0	Toluene	Qualified as ND due to trip blank.
SS-21-007	0.0	Toluene	Qualified as ND due to trip blank.
SS-21-008	0.0	Di-n-butyl phthalate	*Common lab contaminant.
SS-21-009	0.0	Di-n-butyl phthalate	*Common lab contaminant.
SS-21-010	0.0	Di-n-butyl phthalate Nitrate+Nitrite	*Common lab contaminant. Estimated due to MS/MSD RPD nonconformances.

TABLE C-2

**SUMMARY OF DATA EVALUATION AND DATA ANOMALIES -  
CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT  
(CONTINUED)**

Sample	Depth (ft)	Compound	Comment
<b>SWMU NO. 26 DRMO Storage Yard</b>			
SB-26-010	0.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
SB-26-011	0.0	Trichlorofluoromethane	*Common lab contaminant.
SB-26-011 and Duplicate	1.0	Trichlorofluoromethane	Qualified as ND due to method blank contamination.
SB-26-013	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
SB-26-014	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
SB-26-015	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
SS-26-023	0.0	Acetone	Qualified as ND due to method blank contamination.
SS-26-026	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
		VOCs	Estimated due to surrogate re- covery nonconformances.
SS-26-032	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
SS-26-034	0.0	Selenium, Lead	Estimated due to MS/MSD re- covery nonconformances.
SS-26-035	0.0	Zinc, Lead	Estimated due to MS/MSD re- covery nonconformances.
SS-26-038	0.0	Trichlorofluoromethane	Freon - probable lab contaminant or refrigerant leak.
<b>SWMU NO. 27 RCRA Container Storage Area</b>			
SS-27-001 Dup	0.0	Hexane	*Common lab solvent - probable contaminant.
SS-27-002	0.0	Hexane	*Common lab solvent, probable contaminant.
SS-27-003	0.0	Hexane	*Common lab solvent, probable

**TABLE C-2**  
**SUMMARY OF DATA EVALUATION AND DATA ANOMALIES -**  
**CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT**  
**(CONTINUED)**

Sample	Depth (ft)	Compound	Comment
<b>SWMU NO. 27 RCRA Container Storage Area (continued)</b>			
SS-27-004	0.0	Hexane	contaminant. *Common lab solvent, probable contaminant.
SS-27-005	0.0	Hexane	*Common lab solvent, probable contaminant.
SS-27-006	0.0	Hexane	*Common lab solvent, probable contaminant.
		VOCs	Estimated due to nonconforming MS/MSD RPD.
SS-27-007	0.0	Hexane	*Common lab solvent.
<b>SWMU NO. 28 90-Day Drum Storage Area</b>			
SS-28-001	0.0	Zinc, Lead	Estimated due to MS/MSD recovery nonconformances.
SS-28-002	0.0	Acetone	Qualified as ND due to method blank contamination.
		Butylbenzyl phthalate	*Common lab contaminant.
<b>SWMU NO. 29 Drum Storage Area</b>			
SB-29-003	3.0	Hexane	*Common lab solvent, probable contaminant.
SB-29-008	4.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
SB-29-010	4.0	Lead	Estimated due to MS/MSD recovery nonconformances.
SB-29-011	3.0	Hexane	*Common lab solvent, probable contaminant.
SB-29-012	3.0	Hexane	*Common lab solvent, probable contaminant.
SB-29-013	3.0	Hexane	*Common lab solvent, probable contaminant.
SB-29-014	3.0	Hexane	*Common lab solvent, probable contaminant.
		Lead	Estimated due to MS/MSD recovery nonconformances.

TABLE C-2

**SUMMARY OF DATA EVALUATION AND DATA ANOMALIES -  
CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT  
(CONTINUED)**

Sample	Depth (ft)	Compound	Comment
SWMU NO. 29 Drum Storage Area (continued)			
SB-29-014 Dup	3.0	Hexane	*Common lab solvent, probable contaminant.
SB-29-015	3.0	Hexane	*Common lab solvent, probable contaminant.
SB-29-015 Dup	0.0	Cadmium, Chromium, Cobalt Nickel, Vanadium, Zinc, Lead	Estimated due to MS/MSD re- covery nonconformances.
		Hexane	*Common lab solvent - probable contaminant.
SB-29-017	3.0	Hexane	*Common lab solvent - probable contaminant.
SB-29-021	0.0	Lead	Estimated due to MS/MSD re- covery nonconformances.
SB-29-028	4.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
SB-29-030	0.0	Hexane	*Common lab solvent - probable contaminant.
SB-29-030	4.0	Hexane	*Common lab solvent - probable contaminant.
SB-29-031	4.0	TRPH	Qualified as ND due to method blank contamination.
		TRPH	Qualified as ND due to method blank contamination.
SB-29-032	4.0	Hexane	*Common lab solvent - probable contaminant.
SB-29-033	0.0	TRPH	Qualified as ND due to method blank contamination.
		Hexane	*Common lab solvent - probable contaminant.
SB-29-033	3.0	TRPH	Qualified as ND due to method blank contamination.
SB-29-034	4.0	TRPH	Qualified as ND due to method blank contamination.
SB-29-035	4.0	Hexane	*Common lab solvent - probable contaminant.
SB-29-036	3.0	Hexane	*Common lab solvent - probable contaminant.



TABLE C-2

**SUMMARY OF DATA EVALUATION AND DATA ANOMALIES -  
CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT  
(CONTINUED)**

Sample	Depth (ft)	Compound	Comment
<b>SWMU NO. 29 Drum Storage Area (continued)</b>			
		TRPH	Qualified as ND due to method blank contamination.
SB-29-037	4.0	Hexane	*Common lab solvent - probable contaminant.
		TRPH	Qualified as ND due to method blank contamination.
<b>SWMU NO. 34 Pesticide Handling and Storage Area</b>			
SS-34-002	0.0	Zinc	Estimated due to MS/MSD recovery nonconformances.
SS-34-006	0.0	Organochlorine Pesticides	Estimated due to nonconforming MS/MSD RPDs.
<b>SWMU NO. 37 Contaminated Waste Processing Plant</b>			
SS-37-001	0.0	SVOCs	Estimated due to nonconforming MS/MSD RPDs.
SS-37-010	0.0	SVOCs	Estimated due to surrogate recovery nonconformances.
		Lead	Estimated due to MS/MSD recovery nonconformances.
<b>SWMU NO. 38 Industrial Waste Treatment Plant</b>			
SS-38-001	0.0	1,1,2-Trichloro-1,2,2-trifluoroethane	*Freon - probable lab contaminant or refrigerant leak.
		Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
<b>SWMU NO. 42 Bomb Washout Building</b>			
SB-42-003	0.0	Antimony, Silver, Zinc, Lead	Estimated due to MS/MSD recovery nonconformances.
SB-42-008	0.0	Antimony, Lead	Estimated due to MS/MSD recovery nonconformances.

**TABLE C-2**

**SUMMARY OF DATA EVALUATION AND DATA ANOMALIES -  
CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT  
(CONTINUED)**

Sample	Depth (ft)	Compound	Comment
<b>SWMU NO. 45 Stormwater Treatment Area</b>			
SB-45-001	1.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
SB-45-001	9.0	Lead	Estimated due to MS/MSD recovery nonconformances.
SB-45-001	13.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
		Butylbenzyl phthalate	*Common lab contaminant.
SD-45-002	0.0	SVOCs	Estimated due to surrogate recovery nonconformances.
SD-45-003	0.0	SVOCs	Estimated due to surrogate recovery nonconformances.
SD-45-004	0.0	SVOCs	Estimated due to surrogate recovery nonconformances.
SD-45-005	0.0	SVOCs	Estimated due to surrogate recovery nonconformances.
<b>SWMU NO. 47 Boiler Blowdown Water</b>			
SW-47-001	0.0	Chloroform	Qualified as ND due to method blank contamination.

\* Based on professional judgment of reviewer, these data should not be used in the contamination assessment. Concentrations detected were low and not indicative of site conditions or sources. The concentrations found were most likely introduced either in the field or the laboratory. These compounds do not represent site conditions.

VOCs - Volatile Organic Compounds

SVOCs - Semivolatile Organic Compounds

MS/MSD - Matrix Spike/Matrix Spike Duplicate

RPD - Relative Percent Difference

TIC - Tentatively Identified Compound

ND - Not detected

Dup - Duplicate

TRPH - Total Recoverable Petroleum Hydrocarbons

# **Appendices**

**C-1 Through C-18**

## APPENDIX C-1

**(c) All units in wet-dry weight basis**

**RPD = Relative Percent Difference**

NA = Value Not Applicable

**Shading indicates result is greater than control limit**

**Empty rows indicate no data was available**

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES**

Depth (ft.)	Control Limit	EP-01-011 (cont'd)			EP-01-018 (cont'd)		
		Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
	RPD (%)	3	3		6.5	6.5	
Parameters (a)							
Napthalene	30				0.08	0.12	
Methylene Chloride	30				<0.012	0.02	NA
Trichloroethylene	30				0.01	0.01	13
Zinc	30	8980	7270	21	5310	4970	7
Silver	30	5.18	3.86	29	4.78	8.34	
Cadmium	30	56.90	30.30		260	1.25	
Vanadium	30	41.50	25.60		<6.78	6.55	NA
Thallium	30				90.40	62.00	
Cyanide	30	2.34	1.98	17			
Nitrate + Nitrite	30	74.20	93.30	23	4.47	9.28	
Phosphate	30	994.00	276		354	<150	NA
Chloride	30	389.00	485	22	83.40	102	
Sulfate	30	1350.00	1470	9	3960	3010	27
pH	30	6.80	3.80		7.10	4.00	

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Values Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)**

(c) All weights in wet-dry weights basis

**RPD = Relative Percent Difference**

**NA = Value Not Applicable**

**Smoking indicates need is greater than control funds**

Empty rows indicate no data was available

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont.)**

Depth (ft.)	Control		EP-01-029 (cont'd)		RPD (%)
	RPD (%)	Limit	Original	Duplicate	
			5	5	
Parameters (a)					
Phosphate	30		225	175	25
Chloride	30		7	<6.1	NA
pH	30		3.1	3.3	6
Nitrate + Nitrite	30		1.13	1.26	11

(a) All units in mg/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

**APPENDIX C-1  
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)**

Depth (ft.)	Control Limit RPD (%)	SB-29-015			EP-01-042		
		Original 0	Duplicate 0	RPD (%)	Original 2	Duplicate 2	RPD (%)
<b>Parameters (a)</b>							
Mechanics	30	8.90	9.10	2	7.80	8.00	3
Lead	30	28.60	31.10	8	932	762	20
Acetate	30	8.96	7.79	14			
Aluminum	30	9430	10600	12	264000	249000	7
Boron	30	128.00	148.00	14	69.80	53.20	27
Beryllium	30	0.63	0.85	30			
Calcium	30	33800	28800	16	8520	7470	13
Cadmium	30	1.15	0.96	18			
Cobalt	30	4.03	4.68	15	4.14	3.71	11
Copper	30	13.90	15.30	10	337	251	29
Lead	30				932	762	20
Iron	30	9520	11100	15	20000	16100	22
Potassium	30	2870	3310	14	1050	722	
Magnesium	30	6580	7110	8	2440	1830	29
Manganese	30	356	409	14	429	286	
Sodium	30	349	285	20	340	207	
Nickel	30	8.29	10.90	27	16.90	14.90	13
Thallium	30				16.60	<6.62	NA

(a) All units in dry-dry weight basis  
 RPD = Relative Percent Difference  
 NA = Value Not Applicable  
 Shading indicates result is greater than control limit  
 Empty cells indicate no data was available



**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)**

Depth (ft.)	Control Limit	SB-29-015 (con't)		EP-01-042 (con't)		RPD (%)
		Original	Duplicate	Original	Duplicate	
	RPD (%)	0	0	2	2	
<b>Parameters (a)</b>						
Zinc	30	69.20	79.60	130	107	19
Silver	30			1.09	1.27	15
Chromium	30	14.10	15.50	29.70	26.30	12
Vanadium	30	17.200	18.90	29.30	25.60	13
Cyanide	30			<0.92	1.87	NA
Nitrate + Nitrite	30			381	497	26
Phosphate	30			535	<150	NA
Chloride	30			102	131	25
Sulfate	30			158	<50.4	NA
pH	30			6	7.90	
EDT	30	<0.007	0.01			
BOD	30			0.79	4.27	
TOTN	30	175	237			

(a) All units in mg/kg-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

TOTN = Total Recoverable Petroleum Hydrocarbons

## APPENDIX C-1

(c) All units in wet-dry weight basis

**WTD = Relative Percent Difference**

**MA - Master's Degree Available**

**Steady indicators result is greater than control limit**

Empty rows indicate no data was available

# APPENDIX C-1

## FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

Control		EP-01-045 (cont'd)			RPD (%)
Limit	RPD (%)	Original	Duplicate		
Depth (ft.)		3.5	3.5		
Parameters (a)					
Cadmium	30	3.00	3.77		23
Nitrite + Nitrate	30	4.19	4.26		2
Phosphate	30	1150	631		
Chloride	30	586	563		4
Sulfate	30	157	156		1
pH	30	6.30	6.60		5
HMX	30	1.59	1.18		30
RDX	30	8.09	7.09		13
Mercury	30	0.07	<0.050		NA

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available



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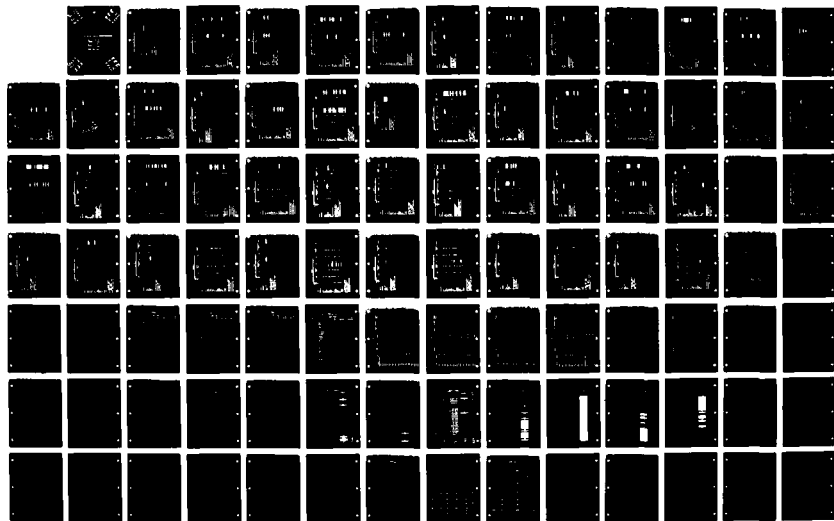
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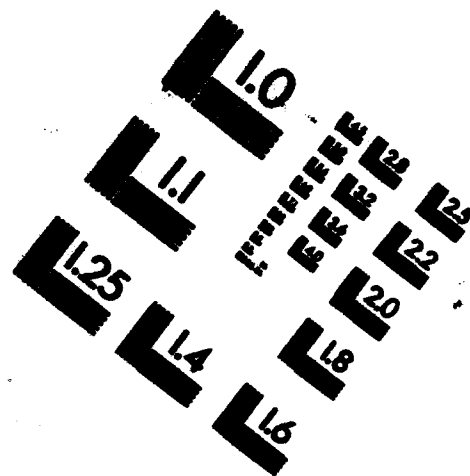
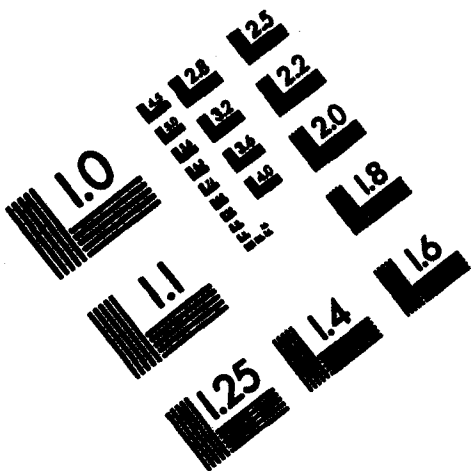
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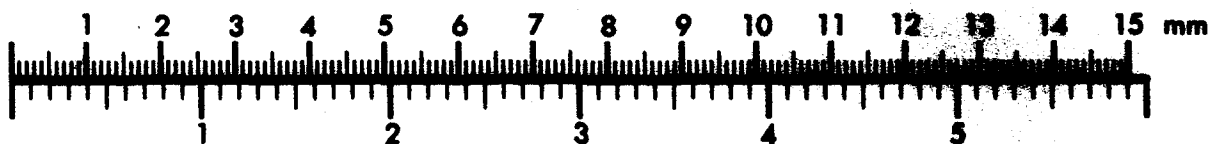


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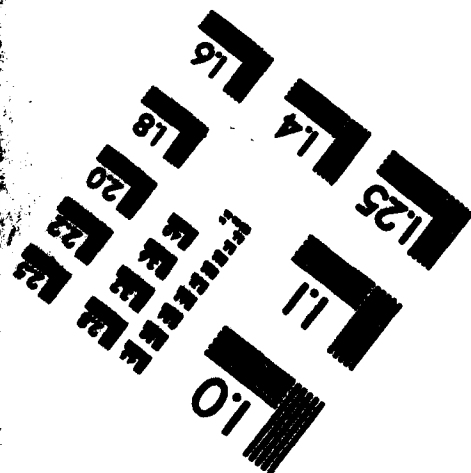
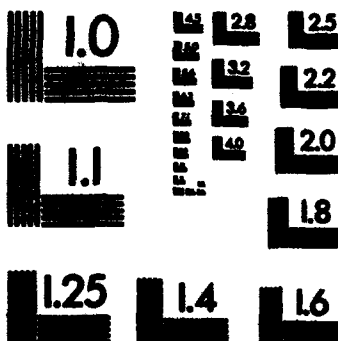
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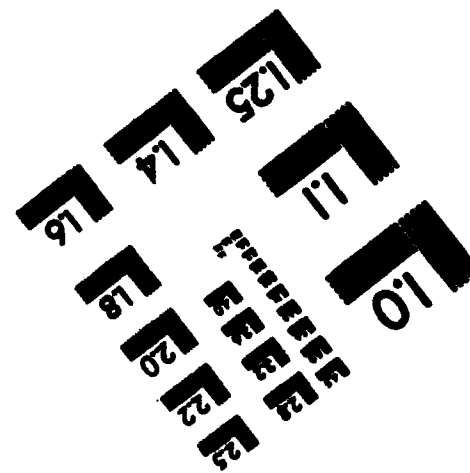
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Inches



MANUFACTURED TO AIM STANDARDS  
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**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)**

Depth (ft.)	Control		EP-01-046 (con't'd)		RPD (%)
	Limit		Original	Duplicate	
	RPD (%)		3	3	
Parameters (a)					
Cyanide	30		1.36	3.05	
Nitrite + Nitrate	30		109	95.40	13
Phosphate	30		387	478	21
Chloride	30		112	97.30	14
pH	30		7	6.80	3
RDX	30		<0.587	3.98	NA

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

# **APPENDIX C-1** **FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)**

Depth (ft.)	Control Limit	EP-01-047			EP-01-051		
		Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
<b>Parameters (a)</b>	<b>RPD (%)</b>						
Molasses	30	6.80	7.50	10	6.20	8.10	27
Lead	30	24.20	23.20	4	130	505	
Arsenic	30	6.59	7.48	13	7.77	5.83	29
Aluminum	30	14900	15600	5	14600	14300	2
Barium	30	296.00	191.00		217	207	5
Beryllium	30	1.30	0.74		0.62	<0.500	NA
Cadmium	30	36000	35300	2	31300	31300	<1
Cobalt	30	7.45	6.92	7	5.62	5.79	3
Copper	30	25.10	23.70	6	130	186	
Iron	30	16600	15400	8	16100	17800	10
Potassium	30	4840	4640	4	4100	3970	3
Magnesium	30	10100	9820	3	7410	7460	1
Manganese	30	557	531	5	553	586	6
Sodium	30	708	660	7	615	608	1
Nickel	30	19.40	18.30	6	13.40	15.50	15
Thallium	30	11.40	<6.62	NA			
Zinc	30	77.70	79.70	3	792.00	7.54	
Chromium	30	53.30	18.50		19.90	21.30	7
Vanadium	30	25.30	24.40	4	19.40	18.60	4

(a) All units in ug/g-dry weight basis  
 RPD = Relative Percent Difference  
 NA = Value Not Applicable  
 Shading indicates result is greater than control limit  
 Empty rows indicate no data was available



**APPENDIX C-1  
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont'd)**

Depth (ft.)	Control Limit	EP-01-047 (cont'd)			EP-01-051 (cont'd)		
		Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
	RPD (%)	3	3		2.5	2.5	
<b>Parameters (a)</b>							
Cadmium	30				20.20	26.20	26
DDX	30	55.20	33.20		12.40	8.26	
HEX	30	4.82	5.32	10	<0.666	0.86	NA
Nitrite + Nitrate	30	1.62	2.33		0.93	1.11	18
Phosphate	30	486	382	24	636	332	
Chloride	30	6.90	10.00				
pH	30	8.20	7.30	12	7.40	6.80	8

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)**

Control Limit		SB-29-007		SB-29-028		
Depth (ft.)	RPD (%)	Original 4	Duplicate 4	Original 4	Duplicate 4	RPD (%)
Parameters (a)						
Melons	30	2.30	2.70	8.20	11.60	
Lead	30	3.31	2.84	3.46	1.52	
Acetate	30	3.03	2.62	7.91	7.18	10
Aluminum	30	901	876	729	380	
Berium	30	36.60	30.50	27	25	8
Calcium	30	53800	76000	37100	33300	11
Copper	30	1.93	2.07	1.14	<0.963	NA
Iron	30	1700	1870	1480	877	
Potassium	30	224	202	210	<100	NA
Magnesium	30	3460	4570	2060	3220	
Manganese	30	48.90	58.30	31.10	21.70	
Sodium	30	172	130	178	<100	NA
Nickel	30	2.38	3.38			
Zinc	30	10.80	9.85			
Chromium	30	5.63	6.38	4.80	4.15	15
Vanadium	30	5.67	6.77	4.67	3.13	
Cyanide	30			3.80	<0.62	NA
Di(2-ethylhexyl)phthalates	30					

(a) All units in ug/g-dry weight basis  
RPD = Relative Percent Difference  
NA = Value Not Applicable  
Shading indicates result is greater than control limit  
Empty rows indicate no data was available

## APPENDIX C-1

**(\*) All values in dry, dry weight basis**

THE UNIVERSITY OF CHICAGO

**NA = Value Not Applicable**

**Study indicates need is greater than control funds**

Empty space indicates no data was available.

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)**

Depth (ft.)	Control Limit	EP-01-053 (con't'd)		EP-01-054 (con't'd)		RPD (%)
		Original	Duplicates	Original	Duplicates	
	RPD (%)	3.5	3.5	2	2	
Parameters (a)						
Cyanide	30			2.09	<0.92	NA
Nitrate + Nitrite	30	79.00	75.30	2.26	25.10	NA
Phosphate	30	647	347	488	<150	5
Chloride	30	2250	2100	8.20	7.80	
Sulfate	30	442.00	479.00			
pH	30	6.50	6.90	7.20	6.90	4

(a) All units in mg/kg weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

## APPENDIX C-1

**(a) All units in wet-dry weight basis**

**RPD = Relative Percent Difference**

NA = Value Not Applicable

**Shading indicates result is greater than control limit**

Empty rows indicate no data was available

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)**

Depth (ft.)	Control		SB-29-031 (cont'd)		EP-01-055 (cont'd)	
	1 Inch	RPD (%)	Original	Duplicate	Original	Duplicate
			0	0	5	5
Parameters (a)						
Thallium	30		<0.62	10.20	0.58	11
Nitrate + Nitrite	30				196	448
Phosphate	30				8.30	2
pH	30					

(a) All units in ug/g-dry weight basis  
 RPD = Relative Percent Difference  
 NA = Value Not Applicable  
 Shading indicates result is greater than control limit  
 Empty rows indicate no data was available

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)**

Depth (ft.)	Control Limit RPD (%)	EP-01-056			EP-01-059		
		Original 2	Duplicate 2	RPD (%)	Original 0	Duplicate 0	RPD (%)
Parameters (a)							
Moisture	30	7.60	7.50	1	2.10	2.00	5
Lead	30	8.59	8.15	5	40.20	42.20	5
Arsenic	30	2.79	2.85	2	4.06	3.91	4
Aluminum	30	1670	1550	7	8110	7400	9
Barium	30	58.10	56.50	3	104	95	9
Calcium	30	18000	22700	23	26800	30900	14
Cadmium	30	1.51	1.74	14	3.54	3.72	5
Cobalt	30				2.84	2.05	
Copper	30	88.20	104	16	59.60	60.60	2
Iron	30	5290	4610	14	9370	7650	20
Potassium	30	589	545	8	1870	1800	4
Magnesium	30	2040	2310	12	4500	5540	21
Manganese	30	72.00	78.80	9	157	156	1
Sodium	30	730	765.00	5	323	309	4
Nickel	30	3.60	3.38	6	8.14	7.13	13
Zinc	30	50.00	51.80	4	254	194	27
Chromium	30				11.60	9.90	16
Vanadium	30	6.31	5.05	22	11.80	11.80	<1

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont'd)**

Depth (ft.)	Control Limit	EP-01-056 (cont'd)		EP-01-059 (cont'd)		RPD (%)
		Original	Duplicate	Original	Duplicate	
	RPD (%)	2	2	0	0	
Parameters (a)						
1,3-Dinitrobenzene	30			0.64	0.60	7
2,4-DNT (LW12)	30			3.52	<0.424	NA
2,6-DNT	30			4.95	2.48	
IBMX	30			22.70	25.70	12
RDX	30			75.30	180	
1,3,5-TNB	30			28.90	56.90	
2,4,6-TNT	30			823	492	
Cyanide	30	2.28	<0.92	2.57	6.30	15
Nitrate + Nitrite	30			15.40	13.30	
Phosphorus	30	194	238	614	322	
Chloride	30	306	319	6.60	6.90	4
pH	30	8.30	8.80	6.60	6.60	<1

(a) All units in mg/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available



# **APPENDIX C-1** **FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)**

Depth (ft.)	Control Limit		EP-01-061		SB-26-004	
	RPD (%)	Original	Duplicate	RPD (%)	Original	Duplicate
		4.5	4.5		1	1
<b>Parameters (a)</b>						
Melrose	30	7.20	7.60	5	6.70	6.20
Lead	30	30.40	30.20	1	35.60	74.60
Arsenic	30	4.02	6.65		7.73	9.06
Aluminum	30	5730	8270		5670	6210
Barium	30	90.40	95.80	6	68.20	73.70
Beryllium	30	<0.500	0.86	NA	0.60	0.61
Calcium	30	22400	23000	3	7710	18000
Cadmium	30	1.60	1.97	21		
Cobalt	30	3.55	3.22	10	2.79	2.53
Copper	30	137	199		15.40	15.00
Iron	30	9990	14000		6580	6510
Potassium	30	1800	1940	7	1760	1760
Magnesium	30	4520	5160	13	3040	3620
Manganese	30	224	258	14	226	216
Sodium	30	228	262	14	227	275
Nickel	30	9.61	13.10		6.65	6.05
Zinc	30	170	245		44.80	45.60
Chromium	30	8.99	11.10	21	9.12	9.75
Vanadium	30	11.70	13.20	12	10.40	11.00

(a) All units in mg/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont'd)**

Depth (ft.)	Control		EP-01-061 (cont'd)		RPD (%)
	Limit		Original	Duplicate	
	RPD (%)		0	0	
<b>Parameters (a)</b>					
Cyanide	30		<0.92	1.61	NA
Nitrite + Nitrate	30		2.42	2.40	1
Phosphate	30		444	106	
pH	30		7.20	7.20	<1
HMX	30		0.97	1.18	19
RDX	30		6.17	28.00	
1,3,5-TNB	30		1.06	0.81	26
2,4,6-TNT	30		11.90	4.63	
Tetryl	30		<0.731	0.81	NA

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

## APPENDIX C-1

(4c) All units in mg/kg-dry weight basis  
 RUPD = Relative Percent Difference  
 UNA = Value Not Applicable  
 Shading indicates result is greater than  
 Twenty rows indicate no data was available

(4c) All units in mg/kg-dry weight basis  
 RUPD = Relative Percent Difference  
 UNA = Value Not Applicable  
 Shading indicates result is greater than  
 Twenty rows indicate no data was available

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)**

Depth (ft.)	Parameters (a)	Control Limit		EP-01-064 (cont'd)		RPD (%)
		RPD (%)	Original	Duplicate		
			0.5	0.5		
	Nitrite + Nitrate	30	3.10	3.78		20
	Phosphate	30	436	84.90		
	pH	30	7.30	6.90		6
	Nitrobenzene	30	8.35	8.28		1
	RDX	30	2.75	<0.587		NA
	1,3,5-TNB	30	20.50	18.40		11
	2,4,6-TNT	30	282	233		19

(a) All units in mg/kg-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

**APPENDIX C-1  
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont)**

Depth (ft.)	Control Limit RPD (%)	EP-01-068				EP-01-069			
		Original	Duplicate	RPD (%)		Original	Duplicate	RPD (%)	
<b>Parameters (a)</b>									
Methane	30	4.20	3.30	24		4.50	4.70	4	
Lead	30	6.73	5.19	26		3.44	4.90		
Arsenic	30	9.37	3.08			2.10	2.69	25	
Aluminum	30	2060	1420			1910	1810	5	
Barium	30	72.50	62.80	14		68.30	73.70	8	
Beryllium	30	0.61	<0.500	NA					
Calcium	30	32100	17600			26500	26200	1	
Cadmium	30	1.77	1.56	13		1.18	1.14	3	
Mercury	30	<0.05	0.08	NA		0.06	0.09		
Copper	30	122	180			97.60	97.70	<1	
Iron	30	5370	4520	17		4220	3640	15	
Potassium	30	558	357			579	492	16	
Magnesium	30	2580	1960	27		3610	3240	11	
Manganese	30	84	69	20		72.50	72.30	<1	
Sodium	30	326	222			268	256	5	
Nickel	30	5.61	4.20	29		4.27	4.36	2	
Zinc	30	61.00	57.70	6		55.50	56.00	1	
Chromium	30	6.65	5.00	28		4.85	4.93	2	
Vanadium	30	6.23	<3.99	NA		6.58	5.00	27	

(a) All units in ug/g-dry weight basis  
 RPD = Relative Percent Difference  
 NA = Values Not Applicable  
 Shading indicates result is greater than control limit  
 Empty rows indicate no data was available

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont'd)**

Control	EP-01-068 (cont'd)				EP-01-069 (cont'd)			
	Light	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)	RPD (%)
Depth (ft.)		2	2		0	0		
Parameters (a)								
Phosphorus	30	321	351.00	9	124.00	436		
pH	30	7.00	9.50	30	8.00	8.20		2

(a) All units in wet-dry weight basis  
 RPD = Relative Percent Difference  
 NA = Value Not Applicable  
 Shading indicates result is greater than control limit  
 Empty cells indicate no data was available

**APPENDIX C-1  
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont)**

Depth (ft.)	Control Limit	EP-01-070			SB-45-001		
	RPD (%)	Original 3	Duplicate 3	RPD (%)	Original 9	Duplicate 9	RPD (%)
Parameters (a)							
Molasses	30	4.80	4.90	2	20.90	20.30	3
Lead	30	7.11	6.89	3	5.53	5.98	8
Arsenic	30	2.73	2.71	1	5.45	5.65	4
Aluminum	30	1670	1780	6	6970	7710	10
Barium	30	92.20	90.00	2	58.90	60.50	3
Cobalt	30	<1.42	2.53	NA	3.57	3.14	13
Cadmium	30	30200	23300	26	68700	63800	7
Chromium	30	1.84	1.50	20			
Mercury	30	0.09	0.07	29			
Copper	30	77.30	96.70	24	8.03	7.59	6
Iron	30	3550	22000		9370	8990	4
Potassium	30	395	432	9	2080	2180	5
Magnesium	30	2630	3110	17	8430	8290	2
Manganese	30	74.70	252		210	197	6
Sodium	30	214.00	214	<1	769	737	4
Nickel	30	4.46	8.21		9.94	9.90	<1
Zinc	30	59.50	63.60	7	36.30	35.90	1
Chromium	30	4.94	14.20		13.30	14.50	9
Vanadium	30	5.24	4.25	21	20.10	20.00	<1

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

**APPENDIX C-1  
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont)**

Depth (ft.)	Control Limits		SB-42-003		SB-42-009	
	RPD (%)	Original	Duplicate	RPD (%)	Original	Duplicate
<b>Parameters (a)</b>						
Molasses	30	5.30	5.90	11	3.70	3.70
Lead	30	53700	31100		16.90	24.10
Arsenic	30	14.80	6.59		5.71	6.62
Aluminum	30	8510	9780	14	1710	2610
Boron	30	1570	1310	18	57.50	55.70
Beryllium	30	1.64	0.72			
Cobalt	30	10.40	3.34			
Cadmium	30	30500	26500	15	71500	69300
Chromium	30	41.30	26.60			
Copper	30	18600	1880		5.75	7.93
Iron	30	66600	10400		2600	3360
Potassium	30	1460	1740	18	421	608
Magnesium	30	5560	5150	8	3190	4020
Manganese	30	423	244		81.20	92.50
Sodium	30	247	147		213	111
Nickel	30	26.70	12.60		4.19	4.53
Zinc	30	5520	2600		22.60	20.00
Chromium	30	21.30	16.70	24	6.05	8.65
Vanadium	30	6.09	12.20		7.20	10.30

(a) All units in dry-weight basis  
 RPD = Relative Percent Difference  
 NA = Values Not Applicable  
 Shading indicates result is greater than control limit  
 Empty rows indicate no data was available



**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont.)**

Depth (ft.)	Control		SB-42-003 (cont'd)		RPD (%)
	Line	RPD (%)	Original	Duplicate	
			0	0	
Parameters (a)					
Arsine	30		674	410	
Thallium	30		61.00	42.00	
Silver	30		34.00	16.80	

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Values Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)**

Depth (ft.)	Control Limit	EP-01-087			SS-42-005		
		Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
<b>Parameters (a)</b>	<b>RPD (%)</b>						
Melanes	30	5.70	6.00	5	790	1310	
Lead	30	1350	196		19.40	27.50	
Arsenic	30	4.33	5.12	17	3780	5320	
Aluminum	30	6800	8040	16	183	256	
Barium	30	240	204	16	2.04	2.82	
Beryllium	30	0.76	0.74	3	19900	20400	25
Cadmium	30	3.85	4.23	9	1.57	2.14	
Calcium	30	28600	28600	<1	53.70	67.10	22
Chromium	30	1.27	1.33	5	5660	7290	25
Copper	30	165	169	2	1030	1410	
Iron	30	8370	9060	16	3290	4220	25
Potassium	30	2770	3070	10	167	204	20
Magnesium	30	6540	6930	6	110	261	
Manganese	30	349	376	7	5.02	6.10	19
Sodium	30	340	353	4	94.10	115	20
Nickel	30	10.70	11.70	9	7.71	11.80	
Zinc	30	111.00	113.00	2	9.72	14.80	
Chromium	30	10.30	11.30	9			
Vanadium	30	12.80	14.50	12			

(a) All units in mg/kg-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)**

Depth (ft.)	Control Limit	EP-01-087 (cont'd)		RPD (%)	SS-42-005 (cont'd)		RPD (%)
		Original	Duplicate		Original	Duplicate	
Parameters (a)							
2,4-DNT (L.W12)	30	5.49	2.47	7			
MXC	30	0.69	0.74	11			
Nitrite + Nitrate	30	61.50	55.10	29			
Phosphate	30	975	727	18			
Chloride	30	50.80	42.20	14			
Sulfate	30	195	169	18			
pH	30	7.20	8.60		<7.14	16.20	NA
Ammonium					<6.62	8.61	NA
Thallium					<0.92	1.12	NA
Cyanide							

(a) All units in mg/kg-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

**APPENDIX C-1  
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont'd)**

Depth (ft.)	Control Limit		SS-26-019		SS-26-025	
	RPD (%)	Original	Duplicate	RPD (%)	Original	Duplicate
		0	0		6	6
<b>Parameters (a)</b>						
Molbren	30	3.20	2.60	21	7.00	6.70
Lead	30	44.20	42.20	5	20.10	21.60
Amoxic	30	5.27	5.11	3	5.31	4.66
Aluminum	30	4030	3470	15	1850	1250
Barium	30	62.20	58.90	5	217.00	30.90
Cadmium	30	40180	39700	1	70700	68600
Cobalt	30	1.98	1.65	18		
Copper	30	15.60	17.40	11	8.25	7.11
Iron	30	5340	4790	11	2860	2550
Potassium	30	1269	1110	13	601	418
Magnesium	30	4720	4020	16	5610	5850
Manganese	30	157	156	1	85.80	84.20
Sodium	30	386	288	29	263	145
Nickel	30	7.74	6.72	14	4.38	4.55
Zinc	30	51.50	51.30	<1	30.80	22.90
Chromium	30	12.80	10.90	16	8.99	7.77
Vanadium	30	10.78	9.14	16	8.44	6.87

(a) All units in mg/kg-dry weight basis  
 RPD = Relative Percent Difference  
 NA = Value Not Applicable  
 Shading indicates result is greater than control limit  
 Empty rows indicate no data was available

## APPENDIX C-1

(a) All units in mg/g-dry weight basis  
 RPD = Relative Percent Difference  
 NA = Values Not Applicable  
 Shading indicates result is greater than control limit  
 Empty rows indicate no data was available

Empty rows indicate no data was available

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont'd)**

Depth (ft.)	Control		EP-01-094 (cont'd)		RPD (%)
	Liquid	RPD (%)	Original	Duplicate	
Parameters (a)			0	0	
Mercury	30		0.07	0.06	13
2,4-DNT (LW12)	30		<0.424	10.60	NA
RDX	30		<0.987	4.90	NA
Nitrite + Nitrate	30		50.60	38.80	26
Phosphate	30		376	460	20
Chloride	30		25.90	21.40	19
pH	30		8.60	8.60	<1

(a) All units in mg/kg-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)**

Depth (ft.)	Control Limit	SS-26-034			SS-19-010		
		Original 5	Duplicate 5	RPD (%)	Original 5	Duplicate 5	RPD (%)
Parameters (a)							
Moisture	30	3.70	3.90	5	1.80	9.00	
Lead	30	32.30	32.90	2	6.81	6.23	9
Ammonia	30	6.67	5.80	14	2.57	6.54	
Aluminum	30	3070	3370	9	3680	4120	
Barium	30	50.80	50.40	1	71.00	74.20	
Cobalt	30	2.02	<1.42	NA	2.30	2.53	11
Calcium	30	35700	44100	21	3920	3990	4
Chromium	30	1.47	1.82	21	1.76	1.55	10
Copper	30	10.90	11.70	7	7.49	8.20	2
Iron	30	4080	5000	20	5430	5690	13
Potassium	30	973	1030	6	1180	1300	9
Magnesium	30	4560	5410	17	1940	2140	5
Manganese	30	142	165	15	162	174	10
Sodium	30	229	190	19	181	187	10
Nickel	30	5.65	5.65	<1	5.10	5.21	7
Zinc	30	49.70	52.00	5	36.00	38.50	2
Chromium	30	8.87	10.00	12	5.04	5.14	7
Vanadium	30	7.90	9.24	16	6.45	7.19	2
							11

(a) All units in mg/kg dry weight basis  
RPD = Relative Percent Difference  
NA = Value Not Applicable  
Shading indicates result is greater than control limit  
Empty rows indicate no data was available

# APPENDIX C-1

## FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

Depth (ft.)	Control		SS-19-010 (con't'd)		RPD (%)
	1 Unit	RPD (%)	Original	Duplicate	
			0	0	
Parameters (a)					
Pyrene	30		1.60	1.60	<1
Phosphate	30		251	156	<1
pH	30		7.60	7.60	<1
Trichlorofluoromethane	30		<0.006	0.01	NA

(a) All units in mg/g-dry weight basis

RPD = Relative Percent Difference

NA = Values Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available



## APPENDIX C-1

**(n) All units in wet-dry weight basis**

**RPD = Relative Percent Difference**

**NA - Value Not Applicable**

Gooding indicates result is greater than control limit

Empty rows indicate no data was available



**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)**

Depth (ft.)	Control Limit	SS-20-012		SS-21-005		RPD (%)
		Original	Duplicate	Original	Duplicate	
	RPD (%)	0	0	0	0	
Parameters (a)						
Moisture	30	1.20	1.30	2.40	2.50	4
Lead	30	2540	912	1350	3970	18
Arsenic	30	6.50	5.60	7.43	8.90	18
Aluminum	30	3590	3290	7360	10500	23
Barium	30	198	188	429	540	NA
Beryllium	30			0.88	<0.500	
Cobalt	30	2.05	2.09	2.21	3.35	9
Calcium	30	27900	34100	39400	42900	
Carbonium	30	8.10	5.98	495	701	
Copper	30	116	131	193	708	
Iron	30	6890	6890	19000	25400	29
Potassium	30	898	738	3570	4880	25
Magnesium	30	3370	2940	5050	6510	20
Manganese	30	145	146	166	202	
Sodium	30	281	296	753	1050	29
Nickel	30	6.82	8.21	5.37	7.19	
Zinc	30	393	306	764	1370	
Chromium	30	8.62	19.10	7660	11100	20
Vanadium	30	8.52	7.18	9.84	12.00	

(a) All units in ug/g-dry weight basis  
RPD = Relative Percent Difference  
NA = Value Not Applicable  
Shading indicates result is greater than control limit  
Empty rows indicate no data was available

## APPENDIX C-1

**(c) All units in wet-dry weight basis**

**WPD = Relative Process Difference**

**NA = Value Not Applicable**

Study indicates need is greater than control limit

Footnote: \*\* indicates no data was available

**LWC2 = Method for explosives**

**LM18 = Method for SVOCs**

## APPENDIX C-1

**(\*) All orders in wet/dry weight basis**

**DED = Relative Percent Difference**

**N/A = Values Not Applicable**

Shedding indicates results is greater than control limit

Empty rows indicate no data was available

**APPENDIX C-1  
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont.)**

Depth (ft.)	Concent Units	SS-01-002 (cont'd)			SS-37-010 (cont'd)		
		Original	Duplicates	RPD (%)	Original	Duplicates	RPD (%)
	RPD (%)	0	0		0	0	
Parameters (a)							
Pyrone	30				2.40	2.60	8
Selenium	30				<0.250	0.36	NA
Thallium	30		9.89	NA			
Mercury + Manganese	30	<0.62	3.25				
Phosphorus	30	18.20	589	NA	296	454	
Chloride	30	<300	14.70	14			
pH	30	8.60	8.60	<1	7.90	7.90	1
Overheadness-p-grams	30				<1.7E-4	1.90E-04	NA

(a) All units in mg/kg-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Blanking indicates result is greater than control limit

Empty rows indicate no data was available

# APPENDIX C-1

## FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont'd)

Depth (ft.)	Control Limit		SD-14-002		SS-28-001	
	RPD (%)	Original	Duplicates	RPD (%)	Original	Duplicates
Parameters (a)						
Moisture	30	94.20	93.90	<1	3.00	3.10
Lead	30	389	417	7	135	193
Arsenic	30	33.60	31.90	5	25.50	24.20
Aluminum	30	5010	4730	6	2430	2740
Barium	30	361	362	<1	62.40	68.50
Calcium	30	117000	107000	9	50300	50500
Chlorine	30	41.90	41.00	2	19.70	19.10
Cobalt	30				1.98	2.14
Copper	30	409	416	2	22.80	29.00
Iron	30	10100	9900	2	5740	5030
Potassium	30	7320	6900	6	812	859
Magnesium	30	143	132	8	5840	5330
Manganese	30	6840	6610	3	168	178
Sodium	30	33.90	<1.71	NA	350	352
Nickel	30	1260	1230	2	8.06	6.60
Zinc	30	147	145	1	123	128
Chromium	30				24.30	28.10
Vanadium	30				8.07	8.46

(a) All units in mg/kg dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont'd)**

Control		SD-14-002 (cont'd)		SS-20-001 (cont'd)	
Depth (ft.)	Limit RFD (%)	Original 0	Duplicate 0	Original 0	Duplicate 0
Parameters (a)					
TEMP	30			372	258
Salinity	30	14.60	13.40		
Silver	30	101	103		
Mercury	30	2.71	2.51		
Phosphate	30	6490	<300		
Chloride	30	5530	4040		
pH	30	7.70	7.60		

(a) All units in mg/dry weight basis

RFD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty cells indicate no data was available

TEMP = Total Recoverable Petroleum Hydrocarbons



## APPENDIX C-1

(a) All units in mg/g-dry weight basis  
 RPD = Relative Percent Difference  
 NA = Values Not Applicable  
 Shading indicates result is greater than control limit  
 Empty rows indicate no data was available

Empty rows indicate no data was available

# APPENDIX C-1

## FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

Depth (ft.)	Channel Label	SS-27-001 (con't)			SS-47-002 (con't)		
		Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Parameters (a)							
Moisture	30	11.40	17.40				
Thallium	30	11.10	11.30	2	15.30	14.40	6
THPH	30				149	138	8

(a) All units in wet-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

THPH = Total Recoverable Petroleum Hydrocarbons

## APPENDIX C-1

(a) All units in ug/g-dry weight basis  
 RPD = Relative Percent Difference  
 NA = Value Not Applicable  
 Shading indicates result is greater than control limit  
 Empty rows indicate no data was available

## APPENDIX C-1

(a) All values in  $\mu\text{g/g}$  dry weight basis  
 RPD = Relative Percent Difference  
 NA = Value Not Applicable  
 Shading indicates result is greater than  
 those rows indicate no data was available

your idea may be accepted and adopted.

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)**

Depth (ft.)	Control Limit RPD (%)	AC-38-001			SB-BK-006		
		Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
<b>Parameters (a)</b>							
Moisture	30	32.10	31.90	1	11.30	11.00	3
Lead	30	443	401	10	11.20	14.00	22
Arsenic	30	7.04	6.62	6	5.50	6.12	11
Aluminum	30	3160	2880	9	11300	12700	12
Barium	30	56.40	58.40	3	82.60	93.10	12
Beryllium	30	0.79	0.85	7	0.86	1.02	17
Calcium	30	4290	4070	5	41000	38600	6
Cadmium	30	29.30	26.40	10			
Cobalt	30	14.50	11.20	26	6.64	7.33	10
Copper	30	54.50	46.30	16	9.29	10.80	15
Iron	30	4310	4010	7	11700	13300	13
Potassium	30	703	775	10	2530	2760	9
Magnesium	30	434	431	1	6450	6770	5
Manganese	30	234	226	3	398	486	20
Sodium	30	2230	2171	3	1730	1910	10
Nickel	30	34.80	26.90	26	12.50	16.20	26
Zinc	30	559	520	7	49.60	54.90	10
Chromium	30	30.10	25.80	15	13.30	14.90	11
Vanadium	30	13.80	10.90	23	25.20	28.50	12

(a) All units in ug/g-dry weight basis  
RPD = Relative Percent Difference  
NA = Value Not Applicable  
Shading indicates result is greater than control limit  
Empty rows indicate no data was available

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont'd)**

Depth (ft.)	Control Limit	AC-38-001 (cont'd)		RPD (%)	SB-BK-005 (cont'd)		RPD (%)
		Original	Duplicate		Original	Duplicate	
	RPD (%)	0	0		15	15	
Parameters (a)							
Dicofolpachlor	30	4.10	3.80	8			
2-Methylpachlor	30	6.70	5.70	16			
4-Methylpachlor	30	4.50	4.50	<1			
Naphthalene	30	2.50	2.20	13			
Phenanthrene	30	0.38	0.30	24			
Phenol	30	380	360	5			
Selenium	30	1.38	1.12	21	7.33	5.96	21
Nitrite + Nitrate	30				207	155	29
Phosphate	30				1480	1340	10
Chloride	30				797	813	2
Sulfate	30				6.30	7.90	23
pH	30						

(a) All units in mg/kg dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

	Control Limit	SB-46-003		SB-46-007		
		Original 1	Duplicate 1	Original 1	Duplicate 1	
Depth (ft.)	RPD (%)		RPD (%)		RPD (%)	
Parameters (d)						
Molecules	30	8.80	8.70	5.40	6.30	15
TDSH	30	2070	2878	48900	52800	8

(c) All units in up/dry weight back

**WRD = Relative Percent Difference**

**NA = Value Not Applicable**

Shading indicates result is greater than control limit

Empty rows indicate no data was available

**TRPHI - Total Recoverable Petroleum Hydrocarbons**

**APPENDIX C-1  
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont.)**

Page (4)	Control Limit		SB-01-005		SB-01-003		
	RPD (%)	Original	Duplicate	RPD (%)	Original	Duplicate	
		20	20		15	15	
Percentages (%)							
Molasses	30	21.00	19.80	6	10.40	9.90	5
Lead	30	11.40	10.80	5	10.10	10.30	2
Acetic	30	4.88	5.17	6	6.59	7.29	10
Aluminum	30	6820	6810	12	4050	5230	25
Boron	30	75.10	82.60	10	37.30	55.30	NA
Beryllium	30	0.72	0.83	14	<0.5	0.64	3
Calcium	30	24200	23800	2	20600	19900	2
Cadmium	30	4.64	4.44	4	3.99	4.06	15
Copper	30	9.60	9.17	5	6.85	6.69	1
Iron	30	11460	11000	4	7770	83400	25
Potassium	30	1020	1050	3	765	891	3
Magnesium	30	5710	5450	5	3890	3940	5
Manganese	30	136	138	1	109	140	3
Sodium	30	2500	2340	7	1750	1700	26
Nickel	30	10.10	9.91	2	7.53	7.95	5
Zinc	30	33.10	32.90	1	25.10	25.80	3
Chromium	30	10.90	10.60	3	6.52	8.50	5
Vanadium	30	23.90	21.80	9	16.10	17.00	

(a) All units in mg/kg wet weight basis  
 RPD = Relative Percent Difference  
 NA = Value Not Applicable  
 Shading indicates result is greater than control limit  
 Empty rows indicate no data was available



## APPENDIX C-1

(a) All units in w/g-dry weight basis  
 RPD = Relative Percent Difference  
 NA = Value Not Applicable  
 Shading indicates result is greater than control limit  
 Empty rows indicate no data was available

Empty cells indicate no data was available

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont.)**

Depth (ft.)	Control Limit	SB-BK-004			SB-01-007		
		Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Parameters (a)	RPD (%)	20	20		15	15	
Molbore	30	9.30	8.00	4	9.50	9.80	3
Lead	30	00	15.10	23	8.80	9.04	3
Antonic	30	0.55	6.66	2	12.40	14.40	15
Aluminum	30	17100	15800	8	3440	2760	22
Barium	30	169	166	2	117	116	1
Beryllium	30	1.53	1.38	10			
Calcium	30	47100	47400	1	28500	28900	1
Cobalt	30	6.87	7.01	2	2.79	3.82	8
Copper	30	15.00	14.60	3	6.10	5.86	4
Iron	30	16300	15400	6	7590	7850	7
Potassium	30	5660	5200	8	981	830	17
Magnesium	30	11500	11100	4	6160	5910	4
Manganese	30	477	456	5	119	107	11
Sodium	30	463	497	7	1420	1440	1
Nickel	30	17.90	16.80	6	1.23	5.99	19
Zinc	30	65.00	61.70	5	22.60	21.30	6
Chromium	30	19.50	18.80	4	6.56	5.99	16
Vanadium	30	27.70	25.90	7	16.30	15.30	6

(a) All units in mgg-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

## APPENDIX C-1

(c) All units in wet-dry weight basis

**RPD = Relative Percent Difference**

NA = Value Not Available

**Student indicators result in greater than control high**

Empty rows indicate no data was available

## APPENDIX C-1

(a) All units in wet-dry weight basis  
 RPD = Relative Percent Difference  
 NA = Value Not Applicable  
 Shading indicates result is greater than control limit  
 Empty rows indicate no data was available

**60 All water is wet-dry weight basis**

**WPD - Relative Position Difference**

**MA - Value Not Available**

Study indicates need is greater than control limit

Empty rows indicate no data was available.

**APPENDIX C-1  
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont'd)**

Depth (ft.)	Control Limit RPD (%)	EP-01-096(cont'd)		RPD (%)	EP-01-099 (cont'd)		RPD (%)
		Original	Duplicate		Original	Duplicate	
Parameters (n)							
Nitrate + Nitrite	30	2.54	2.27	11	1.22	1.34	9
Phosphate	30	273	436	NA	284	599	71
Chloride	30			NA	16.90	18.90	11
pH	30	6.40	8.50	28	8.10	7.50	8

(n) All units in mg/dry weight basis  
 RPD = Relative Percent Difference  
 NA = Value Not Applicable  
 Shading indicates result is greater than control limit  
 Empty rows indicate no data was available

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont.)**

Depth (ft.)	Control Limit		EP-01-102		EP-01-103	
	RPD (%)	Original	Duplicate	RPD (%)	Original	Duplicate
Parameters (a)						
Moldene	30	9.50	9.60	1	10.00	11.10
Lead	30	297	203	30	10.60	11.20
Acetic	30	6.75	7.06	4	6.65	8.92
Aluminum	30	5280	6490	21	3870	4790
Boron	30	129	132	2	101	103
Beryllium	30	1.49	0.63	81		
Cadmium	30	17800	21800	20	35800	35900
Chromium	30	1.74	2.54	37		
Cobalt	30	6.41	5.47	16	4.04	3.94
Copper	30	1330	44.20	187	9.93	12.70
Iron	30	38200	25700	39	6880	7870
Potassium	30	1990	2170	9	1430	1340
Magnesium	30	4480	5070	12	8290	8720
Manganese	30	433	329	27	187	172
Sodium	30	317	345	8	785	813
Nickel	30	26.40	15.80	30	7.78	7.91
Zinc	30	9.63	303	30	124	183
Chromium	30	13.40	12.90	4	5.37	6.47
Vanadium	30	9.19	13.50	30	17.60	19.10

(a) All units in mg/kg-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

**APPENDIX C-1**  
**FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)**

Depth (ft.)	Control		EP-01-102(cont'd)		EP-01-105(cont'd)	
	Limit	RPD (%)	Original	Duplicate	Original	Duplicate
			9.5	9.5	7	7
Parameters (a)						
Silver	30		1.12	<0.589	NA	
2,4,6-TNT	30		7.83	2.16	NA	
Nitrite + Nitrate	30		3.21	2.62	414	
Phosphate	30		486	367	20	
Chloride	30		9.20	<6.1	28	36
pH	30		8.10	7.70	NA	
					9.20	7.60
						19

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

## APPENDIX C-1

(a) All units in mg/g-dry weight basis  
 RPD = Relative Percent Difference  
 NA = Values Not Applicable  
 Shading indicates result is greater than control limit  
 Empty cells indicate no data was available

**(a) All medals in soft-dry weight bands**

**RPD = Relative Percent Difference**

NA = Values Not Available

**Smoking indicates result is greater than control limit**

Empty rows indicate no data was available



## APPENDIX C-1

(a) All units in wet/dry weight basis  
RTD = Relative Percent Difference  
NA = Value Not Applicable  
Shading indicates result is greater than control limit  
Empty rows indicate no data was available

**(c) All units in weight basis**

**RPD = Relative Percent Difference**

NA = Value Not Applicable

**Smoking indicates reward is greater than control limit**

Twenty rows indicate no data was available

## APPENDIX C-3

(c) All units in ug/L  
NA = Values not applicable  
RPD = Relative Percent Difference  
Shading indicates result is greater than control limit  
Empty rows indicate no data was available

NA = Values not applicable

**EPD - Relative Percent Difference**

Studies indicate much is greater than control limit

Empty rows indicate no data was available

**APPENDIX C-2**  
**FIELD DUPLICATE RESULTS FOR WATER SAMPLES**

Depth (ft.)	Control Limit	B-1			RPD (%)
		Original	Duplicate		
Parameters (a)	RPD (%)	293	293		
Trichloroethene	30	3.59	3.51		2
Lead	30	<1.3	1.5		NA
Selenium	30	5.5	3.7		39
Barium	30	48.7	48.0		1
Calcium	30	113000	112000		1
Potassium	30	6230	5820		7
Magnesium	30	51500	51500		0
Manganese	30	25.1	21.8		14
Sodium	30	129000	130000		1
Nickel	30	49.7	49.7		0
Zinc	30	5240	5350		2
Nitrite + Nitrate	30	1980	1990		1
Phosphate	30	842	749		12
Chloride	30	328000	331000		1
Sulfate	30	164000	164000		0

(a) All units in ug/L

NA = Value not applicable

RPD = Relative Percent Difference

Shading indicates result is greater than control limit

**APPENDIX C-3**  
**SUMMARY OF RPDs FOR FIELD DUPLICATE RESULTS**

Parameter	Number Times RPD Exceeded Control Limits	Total Number of Times RPD Calculated	Percent of RPDs Exceeding Control Limits (%)
<u>Soil</u>			
<b>Volatile Organic Compounds</b>			
Trichlorofluoromethane	0	1	0
Xylenes	0	1	0
<b>Semivolatile Organic Compounds</b>			
Pyrene	0	3	0
Bis(2-ethylhexyl)phthalate	0	1	0
Phenanthrene	1	3	33
Fluoranthene	0	1	0
Naphthalene	1	2	50
Diethylphthalate	0	1	0
2-Methylnaphthalene	0	1	0
4-Methylphenol	0	1	0
Phenol	0	1	0
<b>Organochlorine Pesticides</b>			
2,4-D	1	1	100
$\alpha$ -Chlordane	0	2	0
$\beta$ -Chlordane	0	1	0
$\gamma$ -Chlordane	0	1	0
Dieldrin	1	1	100
DDT	0	2	0
DDD	0	1	0
<b>Explosives</b>			
RDX	5	8	63
HMX	0	4	0
2,4-DNT	1	2	50
2,6-DNT	1	1	100
1,3,5-TNB	1	4	25
2,4,6-TNT	2	4	50
Nitrobenzene	0	1	0
1,3-Dinitrobenzene	0	1	0
TRPH	2	5	40
<b>Dioxins/Furans</b>			
Heptachlorodibenzo-p-dioxin	0	1	0
Heptachlorodibenzo furan	1	1	100
Octachlorodibenzo-p-dioxin	0	1	0
Octachlorodibenzo furan	0	1	0

**APPENDIX C-3**  
**SUMMARY OF RPDs FOR FIELD DUPLICATE RESULTS**

Parameter	Number Times RPD Exceeded Control Limits	Total Number of Times RPD Calculated	Percent of RPDs Exceeding Control Limits (%)
<b>Metals</b>			
Beryllium	7	19	37
Lead	21	59	36
Arsenic	11	61	18
Aluminum	17	62	27
Barium	9	62	15
Calcium	9	62	15
Copper	16	61	26
Iron	12	62	19
Potassium	10	60	17
Magnesium	6	62	10
Manganese	7	62	11
Sodium	11	61	18
Nickel	9	60	15
Zinc	9	61	15
Chromium	14	58	24
Vanadium	8	59	14
Antimony	3	5	60
Cadmium	8	32	25
Cobalt	6	48	13
Silver	2	5	40
Thallium	4	8	50
Selenium	0	4	0
Mercury	2	7	29
<b>Cyanide</b>	4	6	67
<b>Anions</b>			
Phosphate	17	28	61
Chloride	4	21	19
Nitrite + Nitrate	5	26	19
Sulfate	0	5	0
<b>Miscellaneous Methods</b>			
Moisture	4	62	6
pH	3	35	9

**APPENDIX C-3**  
**SUMMARY OF RPDs FOR FIELD DUPLICATE RESULTS**

Parameter	Number Times RPD Exceeded Control Limits	Total Number of Times RPD Calculated	Percent of RPDs Exceeding Control Limits (%)
<u>Water</u>			
Metals			
Selenium	1	1	100
Anions			
Nitrite + Nitrate	1	2	50

TRPH - Total Recoverable Petroleum Hydrocarbons

**APPENDIX C-4**  
**SUMMARY OF SOIL MATRIX SPIKE RPDs**

Method	Compound	Control Limit %	Total No. Spiked Results	No. RPDs Outside Limits	Percent of RPDs Outside Limits
<b>Volatile Organic Compounds</b>					
(LM19)	Benzene	21	18	2	11
	Chlorobenzene	21	18	2	11
	1,1-Dichloroethylene	22	18	0	0
	Toluene	21	18	1	6
	Trichloroethene	24	18	0	0
<b>Semivolatile Organic Compounds</b>					
(LM18)	4-Chloro-3-methylphenol	33	26	2	8
	1,4-Dichlorobenzene	27	26	1	4
	2,4-Dinitrotoluene	47	26	5	19
	4-Nitrophenol	50	26	1	4
	n-Nitroso-di-n-propylamine	38	26	1	4
	Pentachlorophenol	47	26	1	4
	Phenol	35	26	1	4
	Pyrene	36	26	1	4
	1,2,4-Trichlorobenzene	23	26	1	4
	2-Chlorophenol	50	26	1	4
	Acenaphthene	19	26	1	4
<b>Organochlorine Pesticides</b>					
(LH10)	g-BHC (Lindane)	20	6	0	0
	Aldrin	40	6	0	0
	Dieldrin	20	5	0	0
	a-Endosulfan	20	6	2	33
	b-Endosulfan	20	6	2	33
	Endrin	20	5	0	0
	Heptachlor	20	5	0	0
	Isodrin	20	6	1	17
	Methoxychlor	20	5	0	0
	DDT	20	6	2	33
<b>Explosives</b>					
(LW12)	2,4-DNT	19	31	0	0
	RDX	18	31	1	3
	1,3,5-TNB	25	31	1	3
	Nitrobenzene	24	31	0	0
	2,4,6-TNT	23	31	0	0
	2-Nitrotoluene	22	31	0	0
	Nitroguanidine	25	4	0	0

**APPENDIX C-4**  
**SUMMARY OF SOIL MATRIX SPIKE RPDs**

Method	Compound	Control Limit %	Total No. Spiked Results	No. RPDs Outside Limits	Percent of RPDs Outside Limits
TRPH					
(I)	TRPH	23	7	0	0
Metals					
(JD19)	Arsenic	20	39	8	21
(JD15)	Selenium	20	39	4	10
(JD17)	Lead	20	18	9	50
(JB01)	Mercury	10	40	2	5
(JS16)	Antimony	25	39	2	5
	Beryllium	25	39	0	0
	Cadmium	25	39	1	3
	Chromium	25	39	1	3
	Cobalt	25	39	0	0
	Copper	25	39	7	18
	Lead	25	39	8	21
	Nickel	25	39	2	5
	Silver	25	39	2	5
	Thallium	25	39	0	0
	Vanadium	25	39	0	0
	Zinc	25	39	7	18
Cyanide					
(KY01)	Cyanide	20	38	1	3
Anions					
(KF10)	Nitrite + Nitrate	10	32	4	13
(KT05)	Fluoride	20	1	0	0
	Sulfate	20	29	0	0
	Chloride	20	29	3	10
(KF14)	Phosphate	20	22	8	36

TRPH - Total Recoverable Petroleum Hydrocarbons



**APPENDIX C-3**  
**SUMMARY OF WATER MATRIX SPIKE RPDs**

Method	Compound	Control Limit %	Total No. Spiked Results	No. RPDs Outside Limits	Percent of RPDs Outside Limits
<b>Metals</b>					
(SD22)	Arsenic	20	2	0	0
(SD21)	Selenium	20	2	0	0
(SD20)	Lead	20	2	0	0
(SB01)	Mercury	20	2	0	0
(SD09)	Thallium	20	2	0	0
(SS10)	Aluminum	20	2	0	0
	Antimony	20	2	0	0
	Barium	15	2	0	0
	Beryllium	15	2	0	0
	Cadmium	15	2	0	0
	Calcium	15	2	1	50
	Chromium	15	2	0	0
	Cobalt	15	2	0	0
	Copper	15	2	0	0
	Iron	20	2	0	0
	Magnesium	15	2	0	0
	Manganese	20	2	0	0
	Nickel	20	2	0	0
	Potassium	5	2	0	0
	Silver	20	2	0	0
	Sodium	15	2	1	50
	Vanadium	20	2	0	0
	Zinc	15	2	1	50
<b>Anions</b>					
(TF22)	Nitrite + Nitrate	5	1	0	0
(TT10)	Chloride	20	1	0	0
(TT10)	Sulfate	20	1	0	0
(TF27)	Phosphate	14	1	0	0

**RPD - Relative Percent Difference**

**APPENDIX C-5**  
**SUMMARY OF WATER MATRIX SPIKE RPDs**

Method	Compound	Control Limit %	Total No. Spiked Results	No. RPDs Outside Limits	Percent of RPDs Outside Limits
<b>Volatile Organic Compounds</b>					
(UM 20)	Benzene	11	4	0	0
	Chlorobenzene	13	4	0	0
	1,1-Dichloroethylene	14	4	0	0
	Toluene	13	4	0	0
	Trichloroethene	14	4	0	0
<b>Semivolatile Organic Compounds</b>					
(UM18)	1,2,4-Trichlorobenzene	28	2	0	0
	1,4-Dichlorobenzene	28	2	0	0
	2,4-Dinitrotoluene	38	2	0	0
	2-Chlorophenol	40	2	0	0
	4-Chloro-3-methylphenol	42	2	0	0
	4-Nitrophenol	50	2	0	0
	Acenaphthene	31	2	0	0
	N-nitroso-di-n-propylamine	38	2	0	0
	Pentachlorophenol	50	2	0	0
	Phenol	42	2	0	0
	Pyrene	31	2	0	0
<b>Organochlorine Pesticides</b>					
(UH13)	γ-BHC, (Lindane)	15	1	0	0
	Aldrin	20	1	0	0
	DDT,pp	20	1	0	0
	Dieldrin	20	1	0	0
	Endrin	20	1	0	0
	Heptachlor	20	1	0	0
	Isodrin	20	1	0	0
	Methoxychlor	20	1	0	0
<b>Explosives</b>					
(UW32)	RDX	25	1	0	0
	1,3,5-TNB	25	1	0	0
	Nitrobenzene	25	1	0	0
	2,4,6-TNT	25	1	0	0
	2-Nitrotoluene	25	1	0	0

# APPENDIX C-6

## SURROGATE RECOVERIES FOR SOIL SAMPLES OUTSIDE CONTROL LIMITS (Page 1 of 3)

Lab ID	Sample ID	Depth (feet)	Method	Compound	Dilution Factor	Recovery, %	Control Limits
<u>Volatile Organic Compounds</u>							
TNSOIL1* 22	EP-01-011	6.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 35	EP-01-018	6.5	V	4-Bromofluorobenzene	1	78	80-120
TNSOIL1* 52	EP-01-026	7.0	V	Toluene-D8	1	80	81-117
TNSOIL1* 108	EP-01-054	4.5	V	Toluene-D8	1	120	81-117
TNSOIL1* 209	EP-01-105	5.0	V	4-Bromofluorobenzene	1	70	80-120
TNSOIL1* 209	EP-01-105	5.0	V	1,2-Dichlorobenzene-D4	1	84	85-115
TNSOIL1* 209	EP-01-105	5.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 211	EP-01-106	8.0	V	4-Bromofluorobenzene	1	76	80-120
TNSOIL1* 211	EP-01-106	8.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 215	EP-01-108	5.0	V	4-Bromofluorobenzene	1	72	80-120
TNSOIL1* 215	EP-01-108	5.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 216	EP-01-108	7.0	V	1,2-Dichlorobenzene-D4	1	84	85-115
TNSOIL1* 219	EP-01-018	6.5	V	4-Bromofluorobenzene	1	72	80-120
TNSOIL1* 297	EP-01-109	4.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 382	SS-01-007	35.0	V	1,2-Dichlorobenzene-D4	1	118	85-115
TNSOIL1* 408	SS-04-001	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 410	SS-04-003	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 412	SS-04-005	0.0	V	4-Bromofluorobenzene	1	76	80-120
TNSOIL1* 412	SS-04-005	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 772	SS-04-005 Dup	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 413	SS-04-006	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 414	SS-14-001	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 420	SS-19-002	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 421	SS-19-003	0.0	V	Toluene-D8	1	120	81-117

# APPENDIX C-6

## SURROGATE RECOVERIES FOR SOIL SAMPLES OUTSIDE CONTROL LIMITS (Page 2 of 8)

Lab ID	Sample ID	Depth (feet)	Method	Compound	Dilution Factor	Recover Y, %	Control Limits
TNSOIL1*422	SS-19-004	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*423	SS-19-005	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*424	SS-19-006	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*425	SS-19-007	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*426	SS-19-008	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*428	SS-19-010	0.0	V	4-Bromofluorobenzene	1	76	80-120
TNSOIL1*428	SS-19-010	0.0	V	1,2-Dichlorobenzene-D4	1	80	85-115
TNSOIL1*429	SS-19-011	0.0	V	1,2-Dichlorobenzene-D4	1	84	85-115
TNSOIL1*431	SS-19-010	0.0	V	1,2-Dichlorobenzene-D4	1	84	85-115
TNSOIL1*434	SS-20-001	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*439	SS-20-006	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*449	SS-20-016	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*461	SS-21-009	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*466	SB-26-004	1.0	V	Toluene-D8	1	120	81-117
TNSOIL1*467	SB-26-005	1.0	V	1,2-Dichlorobenzene-D4	1	116	85-115
TNSOIL1*469	SB-26-007	1.0	V	Toluene-D8	1	120	81-117
TNSOIL1*476	SB-26-014	1.0	V	Toluene-D8	1	120	81-117
TNSOIL1*477	SB-26-015	1.0	V	1,2-Dichlorobenzene-D4	1	120	85-115
TNSOIL1*479	SB-26-001	0.0	V	1,2-Dichlorobenzene-D4	1	124	85-115
TNSOIL1*480	SB-26-002	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*481	SB-26-003	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*482	SB-26-004	0.0	V	1,2-Dichlorobenzene-D4	1	118	85-115
TNSOIL1*485	SB-26-007	0.0	V	4-Bromofluorobenzene	1	74	80-120
TNSOIL1*485	SB-26-007	0.0	V	1,2-Dichlorobenzene-D4	1	74	85-115

# APPEND... 5-6

## SURROGATE RECOVERIES FOR SOIL SAMPLES OUTSIDE CONTROL LIMITS (Page 3 of 8)

Lab ID	Sample ID	Depth (feet)	Method	Compound	Dilution Factor	Recover Y, %	Control Limits
TNSOIL1° 485	SB-26-007	0.0	V	Toluene-D8	1	80	81-117
TNSOIL1° 487	SB-26-009	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 490	SB-26-012	0.0	V	1,2-Dichloroethane-D4	1	82	85-115
TNSOIL1° 493	SB-26-015	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 495	SS-26-032	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 498	SS-26-035	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 499	SS-26-036	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 500	SS-26-037	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 502	SS-26-039	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 503	SS-26-040	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 504	SS-26-041	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 505	SS-26-042	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 507	SS-26-044	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 514	SS-26-021	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 516	SS-26-023	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 518	SS-26-025	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 519	SS-26-026	0.0	V	1,2-Dichloroethane-D4	1	118	85-115
TNSOIL1° 519	SS-26-026	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 522	SS-26-029	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 527	SS-26-025	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 555	SB-29-004	4.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 564	SB-29-008	4.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 568	SB-29-010	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 577	SB-29-015	0.0	V	Toluene-D8	1	120	81-117

# APPENDIX C-6

## SURROGATE RECOVERIES FOR SOIL SAMPLES OUTSIDE CONTROL LIMITS (Page 4 of 8)

Lab ID	Sample ID	Depth (feet)	Method	Compound	Dilution Factor	Recover y, %	Control Limits
TNSOIL1° 585	SB-29-019	2.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 592	SB-29-022	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 597	SB-29-025	4.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 625	SB-29-010	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 630	SS-38-003	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 632	AC-38-001	0.0	V	4-Bromofluorobenzene	1	0	80-120
TNSOIL1° 632	AC-38-001	0.0	V	1,2-Dichlorobenzene-D4	1	0	85-115
TNSOIL1° 632	AC-38-001	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 633	AC-38-001	0.0	V	4-Bromofluorobenzene	1	0	80-120
TNSOIL1° 633	AC-38-001	0.0	V	1,2-Dichlorobenzene-D4	1	0	85-115
TNSOIL1° 633	AC-38-001	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 691	SB-45-001	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 702	SD-45-004	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 703	SD-45-005	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1° 704	SD-45-003	0.0	V	Toluene-D8	1	120	81-117
<b>Sanitation's Organic Compounds</b>							
TNSOIL1° 416	SD-14-003	0.0	SV	2,4,6-Trinitrophenol	20	15	20-140
TNSOIL1° 434	SS-20-001	0.0	SV	Phenol-D5	25	22	24-113
TNSOIL1° 434	SS-20-001	0.0	SV	2,4,6-Trinitrophenol	25	0	20-140
TNSOIL1° 435	SS-20-002	0.0	SV	2,4,6-Trinitrophenol	25	0	20-140
TNSOIL1° 436	SS-20-003	0.0	SV	2,4,6-Trinitrophenol	25	0	20-140
TNSOIL1° 437	SS-20-004	0.0	SV	2,4,6-Trinitrophenol	25	0	20-140
TNSOIL1° 438	SS-20-005	0.0	SV	2,4,6-Trinitrophenol	25	0	20-140

# APPENDIX C-6

## SURROGATE RECOVERIES FOR SOIL SAMPLES OUTSIDE CONTROL LIMITS (Page 5 of 8)

Lab ID	Sample ID	Depth (feet)	Method	Compound	Dilution Factor	Recover y, %	Control Limits
TNSOIL1*439	SS-20-006	0.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1*442	SS-20-009	0.0	SV	2,4,6-Tribromophenol	50	2	20-140
TNSOIL1*443	SS-20-010	0.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1*445	SS-20-012	0.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1*447	SS-20-014	0.0	SV	Phenol-D5	50	120	24-113
TNSOIL1*448	SS-20-015	0.0	SV	2,4,6-Tribromophenol	20	5	20-140
TNSOIL1*450	SS-20-001	0.0	SV	Phenol-D5	25	22	24-113
TNSOIL1*450	SS-20-001	0.0	SV	2,4,6-Tribromophenol	25	0	20-140
TNSOIL1*451	SS-20-012	0.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1*465	SB-26-003	1.0	SV	2,4,6-Tribromophenol	25	15	20-140
TNSOIL1*469	SB-26-007	1.0	SV	2,4,6-Tribromophenol	25	0	20-140
TNSOIL1*479	SB-26-001	0.0	SV	2,4,6-Tribromophenol	25	8	20-140
TNSOIL1*480	SB-26-002	0.0	SV	2,4,6-Tribromophenol	25	16	20-140
TNSOIL1*481	SB-26-003	0.0	SV	2,4,6-Tribromophenol	25	10	20-140
TNSOIL1*494	SS-26-031	0.0	SV	2,4,6-Tribromophenol	40	0	20-140
TNSOIL1*495	SS-26-032	0.0	SV	2,4,6-Tribromophenol	40	0	20-140
TNSOIL1*496	SS-26-033	0.0	SV	2,4,6-Tribromophenol	20	12	20-140
TNSOIL1*500	SS-26-037	0.0	SV	2,4,6-Tribromophenol	10	12	20-140
TNSOIL1*516	SS-26-023	0.0	SV	Phenol-D5	20	16	24-113
TNSOIL1*517	SS-26-024	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
TNSOIL1*518	SS-26-025	0.0	SV	2,4,6-Tribromophenol	40	0	20-140
TNSOIL1*520	SS-26-027	0.0	SV	2,4,6-Tribromophenol	40	0	20-140
TNSOIL1*521	SS-26-028	0.0	SV	2,4,6-Tribromophenol	20	2	20-140
...	...	...	SV	2,4,6-Tribromophenol	10	19	20-140

# APPENDIX C-6

## SURROGATE RECOVERIES FOR SOIL SAMPLES OUTSIDE CONTROL LIMITS (Page 6 of 8)

Lab ID	Sample ID	Depth (feet)	Method	Compound	Dilution Factor	Recover Y, %	Control Limits
TNSOIL1* 523	SS-26-030	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
TNSOIL1* 527	SB-26-025	0.0	SV	2,4,6-Tribromophenol	40	0	20-140
TNSOIL1* 579	SB-29-016	0.0	SV	2,4,6-Tribromophenol	25	3	20-140
TNSOIL1* 580	SB-29-016	2.0	SV	2,4,6-Tribromophenol	20	12	20-140
TNSOIL1* 591	SB-29-017	0.0	SV	2,4,6-Tribromophenol	50	6	20-140
TNSOIL1* 597	SB-29-020	0.0	SV	2,4,6-Tribromophenol	25	8	20-140
TNSOIL1* 588	SB-29-020	2.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1* 589	SB-29-021	0.0	SV	2,4,6-Tribromophenol	20	8	20-140
TNSOIL1* 590	SB-29-021	4.0	SV	2,4,6-Tribromophenol	25	8	20-140
TNSOIL1* 591	SB-29-022	0.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1* 592	SB-29-022	2.0	SV	2,4,6-Tribromophenol	10	6	20-140
TNSOIL1* 594	SB-29-023	2.0	SV	Nitrobenzene-D5	50	20	23-120
TNSOIL1* 594	SB-29-023	2.0	SV	Phenol-D5	50	18	24-113
TNSOIL1* 594	SB-29-023	2.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1* 600	SB-29-026	2.0	SV	2,4,6-Tribromophenol	25	0	20-140
TNSOIL1* 602	SB-29-027	4.0	SV	2,4,6-Tribromophenol	10	16	20-140
TNSOIL1* 613	SB-29-033	0.0	SV	2,4,6-Tribromophenol	20	9	20-140
TNSOIL1* 616	SB-29-034	4.0	SV	2,4,6-Tribromophenol	10	18	20-140
TNSOIL1* 623	SB-29-015	0.0	SV	2,4,6-Tribromophenol	20	16	20-140
TNSOIL1* 636	SS-37-002	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
TNSOIL1* 638	SS-37-004	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
TNSOIL1* 641	SS-37-007	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
TNSOIL1* 644	SS-37-010	0.0	SV	Nitrobenzene-D5	20	9	23-120
TNSOIL1* 644	SS-37-010	0.0	SV	Phenol-D5	20	13	24-113



# APPENDIX 5-6

## SURROGATE RECOVERIES FOR SOIL SAMPLES OUTSIDE CONTROL LIMITS (Page 7 of 8)

Lab ID	Sample ID	Depth (feet)	Method	Compound	Dilution Factor	Recover y, %	Control Limits
TNSOIL1* 644	SS-37-010	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
TNSOIL1* 646	SS-37-012	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
TNSOIL1* 647	SS-37-010	0.0	SV	2,4,6-Tribromophenol	20	15	20-140
TNSOIL1* 652	AC-38-001	0.0	SV	2,4,6-Tribromophenol	5	12	20-140
TNSOIL1* 652	AC-38-001	0.0	SV	Terphenyl-d14	5	12	20-140
TNSOIL1* 653	AC-38-001	0.0	SV	2-Fluorophenol	5	22	25-121
TNSOIL1* 653	AC-38-001	0.0	SV	2,4,6-Tribromophenol	5	5	20-140
TNSOIL1* 653	AC-38-001	0.0	SV	Terphenyl-d14	5	10	20-140
TNSOIL1* 691	SB-45-001	0.0	SV	Nitrobenzene-D5	50	13	23-120
TNSOIL1* 691	SB-45-001	0.0	SV	2-Fluorophenol	50	24	25-121
TNSOIL1* 691	SB-45-001	0.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1* 699	SD-45-001	0.0	SV	2,4,6-Tribromophenol	25	0	20-140
TNSOIL1* 700	SD-45-002	0.0	SV	Nitrobenzene-D5	200	0	23-120
TNSOIL1* 700	SD-45-002	0.0	SV	Phenol-D5	200	18	24-113
TNSOIL1* 700	SD-45-002	0.0	SV	2-Fluorophenol	200	0	25-121
TNSOIL1* 700	SD-45-002	0.0	SV	2,4,6-Tribromophenol	200	0	20-140
TNSOIL1* 700	SD-45-002	0.0	SV	Terphenyl-d14	200	0	20-140
TNSOIL1* 700	SD-45-002	0.0	SV	2-Fluorobiphenyl	200	0	30-115
TNSOIL1* 701	SD-45-003	0.0	SV	2,4,6-Tribromophenol	25	0	20-140
TNSOIL1* 702	SD-45-004	0.0	SV	Nitrobenzene-D5	100	0	23-120
TNSOIL1* 702	SD-45-004	0.0	SV	Phenol-D5	100	120	24-113
TNSOIL1* 702	SD-45-004	0.0	SV	2-Fluorophenol	100	0	25-121
TNSOIL1* 702	SD-45-004	0.0	SV	2,4,6-Tribromophenol	100	0	20-140
TNSOIL1* 703	SD-45-005	0.0	SV	Nitrobenzene-D5	100	0	23-120

# APPENDIX C-6

## SURROGATE RECOVERIES FOR SOIL SAMPLES OUTSIDE CONTROL LIMITS (Page 8 of 8)

Lab ID	Sample ID	Depth (feet)	Method	Compound	Dilution Factor	Recover y, %	Control Limits
TNSOIL1* 703	SD-45-005	0.0	SV	Phenol-D5	100	120	24-113
TNSOIL1* 703	SD-45-005	0.0	SV	2-Fluorophenol		0	25-121
TNSOIL1* 703	SD-45-005	0.0	SV	2,4,6-Tribromophenol	100	0	20-140
TNSOIL1* 704	SD-45-003	0.0	SV	2,4,6-Tribromophenol	25	0	20-140
TNSOIL1* 768	SD-47-001	0.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1* 769	SD-47-002	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
TNSOIL1* 772	SS-04-005	0.0	SV	2-Fluorobiphenyl	4	120	30-115
TNSOIL1* 774	SD-47-002	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
<b>Organochlorine Pesticides</b>							
TNSOIL1* 565	SB-29-009	0.0	OCP	Tetrachloro-m-xylene	1	66	67-119
TNSOIL1* 581	SB-29-017	0.0	OCP	Decachlorobiphenyl	50	31	60-120
TNSOIL1* 582	SB-29-017	3.0	OCP	Decachlorobiphenyl	10	40	60-120
TNSOIL1* 623	SB-29-015	0.0	OCP	Decachlorobiphenyl	20	45	60-120
TNSOIL1* 630	SS-34-002	0.0	OCP	Decachlorobiphenyl	100	0	60-120
TNSOIL1* 631	SS-34-003	0.0	OCP	Decachlorobiphenyl	100	0	60-120
TNSOIL1* 632	SS-34-004	0.0	OCP	Decachlorobiphenyl	100	0	60-120
TNSOIL1* 634	SS-34-002	0.0	OCP	Decachlorobiphenyl	200	0	60-120
TNSOIL1* 700	SD-45-002	0.0	OCP	Decachlorobiphenyl	200	12	60-120
TNSOIL1* 702	SD-45-004	0.0	OCP	Decachlorobiphenyl	5	34	60-120
TNSOIL1* 703	SD-45-005	0.0	OCP	Decachlorobiphenyl	20	28	60-120
TNSOIL1* 773	SS-34-006	0.0	OCP	Decachlorobiphenyl	20	0	60-120

V - Volatile Organic Compounds  
OCP - Organochlorine Pesticides  
Semivolatile Organic Compounds

**APPENDIX C-7**  
**SURROGATE RECOVERIES FOR WATER SAMPLES OUTSIDE CONTROL LIMITS**

Lab ID	Sample ID	Depth (feet)	Method	Compound	Recovery, %	Control Limits
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**Volatile Organic Compounds**

All samples had acceptable surrogate recoveries.

**Semivolatile Organic Compounds**

All samples had acceptable surrogate recoveries.

**Organochlorine Pesticides**

All samples had acceptable surrogate recoveries.

ID - Identification

**APPENDIX C-8**  
**SUMMARY OF SOIL MATRIX SPIKE RECOVERIES**

Method	Compound	Control Limit %	Total No. Spiked Results	No. Spikes Outside Limits	Percent of Spikes Outside Limits
<b>Volatile Organic Compounds</b>					
(LM19)	Benzene	66-142	37	0	0
	Chlorobenzene	60-133	37	0	0
	1,1-Dichloroethylene	59-172	37	0	0
	Toluene	59-139	37	0	0
	Trichloroethene	62-137	37	0	0
<b>Semivolatile Organic Compounds</b>					
(LM18)	4-Chloro-3-methylphenol	26-103	52	5	10
	1,4-Dichlorobenzene	28-104	52	4	8
	2,4-Dinitrotoluene	28-89	52	23	44
	4-Nitrophenol	11-114	52	23	44
	n-Nitroso-di-n-propylamine	41-126	52	2	4
	Pentachlorophenol	17-109	52	29	56
	Phenol	26-90	52	7	13
	Pyrene	35-142	52	0	0
	1,2,4-Trichlorobenzene	38-107	52	3	6
	2-Chlorophenol	25-102	52	3	6
	Acenaphthene	31-137	52	0	0
<b>Organochlorine Pesticides</b>					
(LH10)	g-BHC (Lindane)	20-140	12	2	17
	Aldrin	42-122	12	3	25
	Dieldrin	40-140	10	2	20
	a-Endosulfan	45-150	12	3	25
	b-Endosulfan	20-200	12	4	33
	Endrin	30-150	10	4	40
	Heptachlor	35-110	12	9	75
	Isodrin	80-120	12	4	33
	Methoxychlor	80-120	10	5	50
	DDT	25-160	12	5	42
<b>Explosives</b>					
(LW12)	2,4-DNT	68-106	62	6	10
	RDX	71-107	62	4	6
	1,3,5-TNB	65-115	62	0	0
	Nitrobenzene	72-120	62	0	0
	2,4,6-TNT	72-118	62	6	10
	2-Nitrotoluene	70-114	62	4	6
	Nitroguanidine	70-120	4	0	0

**APPENDIX C-8**  
**SUMMARY OF SOIL MATRIX SPIKE RECOVERIES**

Method	Compound	Control Limit %	Total No. Spiked Results	No. Spikes Outside Limits	Percent of Spikes Outside Limits
<b>Metals</b>					
(JD19)	Arsenic	80-120	78	43	55
(JD15)	Selenium	80-120	78	64	82
(JD17)	Lead	80-120	20	21	105
(JB01)	Mercury	80-120	78	20	26
(JS16)	Antimony	75-125	78	31	40
	Beryllium	75-125	78	2	3
	Cadmium	75-125	78	4	5
	Chromium	75-125	78	5	6
	Cobalt	75-125	78	3	4
	Copper	75-125	78	25	32
	Lead	75-125	78	19	24
	Nickel	75-125	78	5	6
	Silver	75-125	78	9	12
	Thallium	75-125	78	3	4
	Vanadium	75-125	78	3	4
	Zinc	75-125	78	22	28
<b>Cyanide</b>					
(KY01)	Cyanide	70-120	74	1	1
<b>Anions</b>					
(KF10)	Nitrite + Nitrate	80-120	62	6	10
(KT05)	Sulfate	85-115	56	4	7
	Chloride	85-115	56	9	16
(KF14)	Phosphate	80-120	44	18	41
<b>Miscellaneous Methods</b>					
(I)	TRPH	76-122	14	0	0

TRPH - Total Recoverable Petroleum Hydrocarbons

**APPENDIX C-9**  
**SUMMARY OF WATER MATRIX SPIKE RECOVERIES**

Method	Compound	Control Limit %	Total No. Spiked Results	No. Spikes Outside Limits	Percent of Spikes Outside Limits
<b>Volatile Organic Compounds</b>					
(UM 20)	Benzene	76-127	8	0	0
	Chlorobenzene	75-130	8	0	0
	1,1-Dichloroethylene	61-145	8	0	0
	Toluene	76-125	8	0	0
	Trichloroethene	71-120	8	0	0
<b>Semivolatile Organic Compounds</b>					
(UM18)	4-Chloro-3-methylphenol	23-97	4	0	0
	1,4-Dichlorobenzene	36-97	4	0	0
	2,4-Dinitrotoluene	24-96	4	2	50
	4-Nitrophenol	10-80	4	0	0
	n-Nitroso-di-n-propylamine	41-116	4	0	0
	Pentachlorophenol	9-103	4	2	50
	Phenol	12-89	4	0	0
	Pyrene	26-127	4	0	0
	1,2,4-Trichlorobenzene	39-98	4	0	0
	2-Chlorophenol	27-123	4	0	0
	Acenaphthene	46-118	4	0	0
<b>Organochlorine Pesticides</b>					
(UH13)	g-BHC (Lindane)	56-123	2	0	0
	Aldrin	42-122	2	0	0
	DDT,pp	25-160	2	0	0
	Dieldrin	40-140	2	0	0
	a-Endosulfan	70-120	2	0	0
	b-Endosulfan	60-130	2	0	0
	Endrin	30-150	2	0	0
	Heptachlor	40-131	2	0	0
	Isodrin	80-120	2	0	0
	Methoxychlor	80-120	2	0	0
<b>Explosives</b>					
(UW32)	2,4-DNT	65-105	2	0	0
	RDX	70-110	2	0	0
	1,3,5-TNB	65-105	2	0	0
	Nitrobenzene	65-105	2	0	0
	2,4,6-TNT	65-105	2	0	0
	2-Nitrotoluene	60-100	2	0	0

**APPENDIX C-9**  
**SUMMARY OF GROUNDWATER MATRIX SPIKE RECOVERIES**

Method	Compound	Control Limit %	Total No. Spiked Results	No. Spikes Outside Limits	Percent of Spikes Outside Limits
TRPH (I)		76-122	1	0	0
<b>Metals</b>					
(SD22)	Arsenic	80-120	4	0	0
(SD21)	Selenium	80-120	4	3	75
(SD20)	Lead	80-120	4	1	25
(SB01)	Mercury	80-120	4	1	25
(SD09)	Thallium	80-120	4	0	0
(SS10)	Aluminum	80-120	4	0	0
	Antimony	80-120	4	0	0
	Barium	85-115	4	0	0
	Beryllium	85-115	4	0	0
	Cadmium	85-115	4	0	0
	Calcium	85-115	4	3	75
	Chromium	85-115	4	0	0
	Cobalt	85-115	4	0	0
	Copper	85-115	4	0	0
	Iron	80-120	4	0	0
	Magnesium	85-115	4	1	25
	Manganese	85-115	4	0	0
	Nickel	80-120	4	0	0
	Potassium	92-108	4	0	0
	Silver	80-120	4	0	0
	Sodium	85-115	4	2	50
	Vanadium	80-120	4	0	0
	Zinc	85-115	4	1	25
Cyanide (TF18)		85-115	1	1	100
<b>Anions</b>					
(TF22)	Nitrite + Nitrate	92-108	2	0	0
(TT10)	Chloride	85-115	2	0	0
(TT10)	Sulfate	85-115	2	0	0
(TF27)	Phosphate	86-114	2	0	0

TRPH - Total Recoverable Petroleum Hydrocarbons

**APPENDIX C-10**  
**SUMMARY OF POSITIVE**  
**SOIL METHOD BLANK CONCENTRATIONS**

Lot Number	Method	Compound	Method Blank (µg/g)	CRL (µg/g)
<b>Volatile Organic Compounds</b>				
YSM	LM19	Acetone	0.007	0.017
YSN	LM19	Acetone		0.017
YST	LM19	Acetone	0.001	0.017
YSW	LM19	Acetone	0.004	0.017
YSY	LM19	Acetone	0.003	0.017
ZTC	LM19	Acetone	0.003	0.017
ZTB	LM19	Acetone		0.017
YSV	LM19	Acetone	0.008	0.017
YSX	LM19	Acetone	0.008	0.017
YSZ	LM19	Acetone	0.01	0.017
ZTA	LM19	Acetone	0.01	0.017
ZTJ	LM19	Acetone	0.007	0.017
ZTE	LM19	Acetone	0.004	0.017
ZTW	LM19	Acetone	0.004	0.017
ZTX	LM19	Acetone	0.001	0.017
ZTG	LM19	Acetone	0.007	0.017
ZTM	LM19	Acetone	0.003	0.017
ZTO	LM19	Acetone	0.003	0.017
ZTP	LM19	Acetone	0.007	0.017
ZTN	LM19	Acetone	0.007	0.017
ZTS	LM19	Acetone	0.007	0.017
ZTL	LM19	Acetone	0.01	0.017
ZTQ	LM19	Acetone	0.003	0.017
ZTT	LM19	Acetone	0.003	0.017
ZTY	LM19	Acetone	0.003	0.017
ZTV	LM19	Acetone	0.003	0.017
AJB	LM19	Acetone	0.004	0.017
AJC	LM19	Acetone	0.004	0.017
AJD	LM19	Acetone	0.003	0.017
AJF	LM19	Acetone	0.005	0.017
AJI	LM19	Acetone	0.003	0.017
AJJ	LM19	Acetone	0.003	0.017
AJG	LM19	Acetone	0.003	0.017
AJD	LM19	Carbon Disulfide	0.0004	0.0044
YSV	LM19	Chloroform		0.00087
YSX	LM19	Chloroform	0.0004	0.00087
YSZ	LM19	Chloroform		0.00087
ZTA	LM19	Chloroform		0.00087
ZTE	LM19	Chloroform	0.0004	0.00087
ZTW	LM19	Chloroform	0.0005	0.00087



**APPENDIX C-10**  
**SUMMARY OF POSITIVE**  
**SOIL METHOD BLANK CONCENTRATIONS**

Lot Number	Method	Compound	Method Blank (µg/g)	CRL (µg/g)
ZTM	LM19	Chloroform	0.0004	0.00087
ZTO	LM19	Chloroform	0.0003	0.00087
AJD	LM19	Chloroform	0.0005	0.00087
AJF	LM19	Chloroform	0.0004	0.00087
AJI	LM19	Chloroform	0.0003	0.00087
AJJ	LM19	Chloroform	0.0005	0.00087
YST	LM19	Methylene Chloride	0.003	0.012
YSW	LM19	Methylene Chloride	0.001	0.012
YSY	LM19	Methylene Chloride	0.003	0.012
ZTC	LM19	Methylene Chloride	0.003	0.012
YSV	LM19	Methylene Chloride	0.003	0.012
YSX	LM19	Methylene Chloride	0.002	0.012
ZTA	LM19	Methylene Chloride	0.006	0.012
ZTF	LM19	Methylene Chloride	0.0009	0.012
ZTE	LM19	Methylene Chloride	0.005	0.012
ZTW	LM19	Methylene Chloride	0.002	0.012
ZTX	LM19	Methylene Chloride	0.002	0.012
ZTM	LM19	Methylene Chloride	0.001	0.012
ZTO	LM19	Methylene Chloride	0.001	0.012
ZTT	LM19	Methylene Chloride	0.001	0.012
AJD	LM19	Methylene Chloride	0.002	0.012
AJF	LM19	Methylene Chloride	0.003	0.012
AJI	LM19	Methylene Chloride	0.002	0.012
AJJ	LM19	Methylene Chloride	0.001	0.012
ZTF	LM19	Toluene	0.0003	0.00078
ZTM	LM19	Toluene	0.0006	0.00078
ZTO	LM19	Toluene	0.0004	0.00078
ZTS	LM19	Toluene	0.0003	0.00078
ZTQ	LM19	Toluene	0.0004	0.00078
ZTT	LM19	Toluene	0.0005	0.00078
AJC	LM19	Toluene	0.0004	0.00078
YSX	LM19	Benzene	0.0002	0.0015
YST	LM19	Trichlorofluoromethane	0.005	0.0059
ZTA	LM19	Trichlorofluoromethane	0.004	0.0059
ZTW	LM19	Trichlorofluoromethane	0.004	0.0059
ZTX	LM19	Trichlorofluoromethane	0.005	0.0059
ZTG	LM19	Trichlorofluoromethane	0.004	0.0059
ZTS	LM19	Trichlorofluoromethane	0.004	0.0059
ZTQ	LM19	Trichlorofluoromethane	0.004	0.0059
ZTT	LM19	Trichlorofluoromethane	0.002	0.0059
AJB	LM19	Trichlorofluoromethane	0.002	0.0059

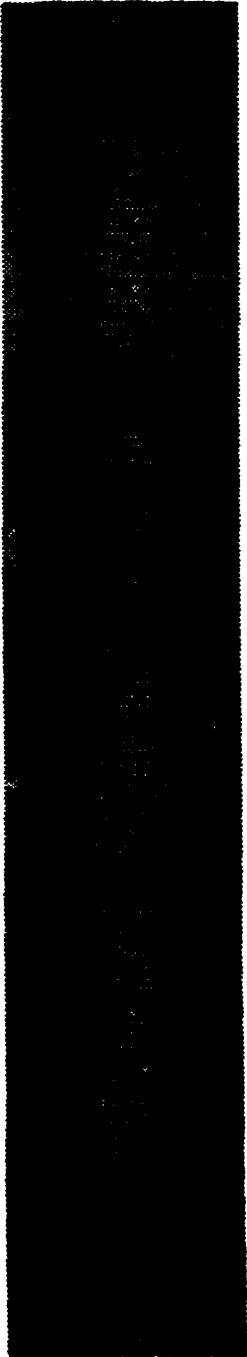
**APPENDIX C-10**  
**SUMMARY OF POSITIVE**  
**SOIL METHOD BLANK CONCENTRATIONS**

Lot Number	Method	Compound	Method Blank (µg/g)	CRL (µg/g)
AJC	LM19	Trichlorofluoromethane		0.0059
AJF	LM19	Trichlorofluoromethane	0.002	0.0059
AJI	LM19	Trichlorofluoromethane	0.005	0.0059
AJJ	LM19	Trichlorofluoromethane	0.002	0.0059
AJG	LM19	Trichlorofluoromethane	0.001	0.0059
YSW	LM19	Dichlorobenzene	0.001	0.1
<b>Semivolatile Organic Compounds</b>				
YLS	LM18	Bis(2-ethylhexyl)phthalate	0.34	0.62
YLU	LM18	Bis(2-ethylhexyl)phthalate	0.60	0.62
ZNB	LM18	Bis(2-ethylhexyl)phthalate	0.11	0.62
YLY	LM18	Bis(2-ethylhexyl)phthalate	0.18	0.62
ZNE	LM18	Bis(2-ethylhexyl)phthalate	0.07	0.62
ZNC	LM18	Bis(2-ethylhexyl)phthalate		0.62
ZND	LM18	Bis(2-ethylhexyl)phthalate	0.28	0.62
ZNG	LM18	Bis(2-ethylhexyl)phthalate	0.15	0.62
ZNH	LM18	Bis(2-ethylhexyl)phthalate	0.05	0.62
ZNO	LM18	Bis(2-ethylhexyl)phthalate	0.16	0.62
ZNN	LM18	Bis(2-ethylhexyl)phthalate	0.13	0.62
ZNK	LM18	Bis(2-ethylhexyl)phthalate	0.08	0.62
ZNR	LM18	Bis(2-ethylhexyl)phthalate	0.10	0.62
ZNT	LM18	Bis(2-ethylhexyl)phthalate	0.25	0.62
ZNU	LM18	Bis(2-ethylhexyl)phthalate	0.10	0.62
ZNP	LM18	Bis(2-ethylhexyl)phthalate	0.12	0.62
ZNV	LM18	Bis(2-ethylhexyl)phthalate	0.15	0.62
ZNX	LM18	Bis(2-ethylhexyl)phthalate	0.09	0.62
ZNW	LM18	Bis(2-ethylhexyl)phthalate	0.09	0.62
ZNY	LM18	Bis(2-ethylhexyl)phthalate	0.15	0.62
AEA	LM18	Bis(2-ethylhexyl)phthalate	0.36	0.62
AEB	LM18	Bis(2-ethylhexyl)phthalate	0.10	0.62
AEG	LM18	Bis(2-ethylhexyl)phthalate	0.11	0.62
AEK	LM18	Bis(2-ethylhexyl)phthalate	0.47	0.62
ZNV	LM18	Phenanthrene	0.03	0.033
<b>Organochlorine Pesticides</b>				
YPR	LH10	α-BHC	0.XXX	0.00907
YPU	LH10	α-BHC	0.00008	0.00907
YPR	LH10	γ-BHC (Lindane)	0.00009	0.00638
YPU	LH10	γ-BHC (Lindane)	0.00006	0.00638
YPR	LH10	DDD,PP'	0.0003	0.00826
YPR	LH10	DDT,PP'	0.0004	0.00707

**APPENDIX C-10**  
**SUMMARY OF POSITIVE**  
**SOIL METHOD BLANK CONCENTRATIONS**

Lot Number	Method	Compound	Method Blank (µg/g)	CRL (µg/g)
ABD	LH10	DDT,PP'	0.002	0.00707
YPR	LH10	Endosulfan Sulfate	0.0004	0.000763
YPR	LH10	Isodrin	0.0004	0.00461
YPU	LH10	Isodrin	0.0002	0.00461
YPZ	LH10	Isodrin	0.XXX	0.00461
RNY	LH11	2,4-Dichlorophenoxyacetic Acid	0.005	17.7
<b>TRPH</b>				
ZOW	I	TRPH	5.07	21*
ZOX	I	TRPH		21*
ALV	I	TRPH	10.7	21*
ALW	I	TRPH	10.9	21*
ASK	I	TRPH	15.1	21*
<b>Metals</b>				
ZIZ	JS19	Arsenic		0.25
ZJH	JS16	Beryllium	0.301	0.50
ZJS	JS16	Beryllium	0.312	0.50
ZJT	JS16	Beryllium	0.347	0.50
ZJU	JS16	Beryllium	0.271	0.50
YGS	JS16	Chromium		4.05
YGT	JS16	Chromium	3.60	4.05
ZJA	JS16	Chromium		4.05
ZJB	JS16	Chromium		4.05
ZJC	JS16	Chromium		4.05
ZJD	JS16	Chromium		4.05
ZJF	JS16	Chromium		4.05
ZJH	JS16	Chromium		4.05
ZJI	JS16	Chromium		4.05
ZJK	JS16	Chromium		4.05
ZJL	JS16	Chromium	3.80	4.05
ZJM	JS16	Chromium		4.05
ZJQ	JS16	Chromium	3.53	4.05
ZJS	JS16	Chromium		4.05
ZJT	JS16	Chromium		4.05
ZJU	JS16	Chromium		4.05
ZJW	JS16	Chromium		4.05
ZJX	JS16	Chromium		4.05
AOA	JS16	Chromium	3.66	4.05
AOD	JS16	Chromium		4.05
YGT	JS16	Cobalt	1.02	1.42

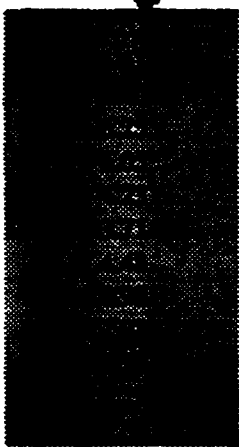
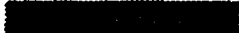



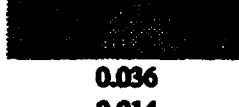
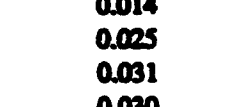
**APPENDIX C-10**  
**SUMMARY OF POSITIVE**  
**SOIL METHOD BLANK CONCENTRATIONS**

Lot Number	Method	Compound	Method Blank (µg/g)	CRL (µg/g)
YGS	JS16	Copper		0.965
YGT	JS16	Copper		0.965
ZIA	JS16	Copper		0.965
ZJB	JS16	Copper		0.965
ZJC	JS16	Copper		0.965
ZJD	JS16	Copper		0.965
ZJF	JS16	Copper		0.965
ZJH	JS16	Copper		0.965
ZJI	JS16	Copper		0.965
ZJK	JS16	Copper		0.965
ZJL	JS16	Copper		0.965
ZJM	JS16	Copper		0.965
ZJQ	JS16	Copper		0.965
ZJS	JS16	Copper		0.965
ZJT	JS16	Copper		0.965
ZJU	JS16	Copper		0.965
ZJW	JS16	Copper		0.965
ZJX	JS16	Copper		0.965
AOA	JS16	Copper		0.965
AOD	JS16	Copper		0.965
ZAI	JD17	Lead		0.177
ZAJ	JD17	Lead		0.177
ZAM	JD17	Lead		0.177
ZAO	JD17	Lead		0.177
ZAP	JD17	Lead		0.177
ZAS	JD17	Lead		0.177
ZAN	JD17	Lead		0.177
ZAW	JD17	Lead		0.177
ZAZ	JD17	Lead		0.177
ZAX	JD17	Lead		0.177
ZXA	JD17	Lead		0.177
ZXB	JD17	Lead		0.177
ZXM	JD17	Lead		0.177
ZXG	JD17	Lead		0.177
ZXI	JD17	Lead		0.177
ZXJ	JD17	Lead		0.177
ZXQ	JD17	Lead		0.177
ZXS	JD17	Lead		0.177
ZXW	JD17	Lead		0.177
ZXZ	JD17	Lead		0.177
YGT	JS16	Lead	3.67	10.5

**APPENDIX C-10**  
**SUMMARY OF POSITIVE**  
**SOIL METHOD BLANK CONCENTRATIONS**

Lot Number	Method	Compound	Method Blank ( $\mu\text{g/g}$ )	CRL ( $\mu\text{g/g}$ )
ZJA	JS16	Lead	3.04	10.5
ZJB	JS16	Lead	3.48	10.5
ZJD	JS16	Lead	3.52	10.5
ZJH	JS16	Lead	4.06	10.5
ZJL	JS16	Lead	2.55	10.5
ZJM	JS16	Lead	3.27	10.5
ZJT	JS16	Lead	3.14	10.5
ZJW	JS16	Lead	3.61	10.5
AOA	JS16	Lead	3.08	10.5
YGS	JS16	Nickel	1.62	1.71
YGT	JS16	Nickel	1.37	1.71
ZJA	JS16	Nickel	1.14	1.71
ZJB	JS16	Nickel	0.949	1.71
ZJC	JS16	Nickel	0.764	1.71
ZJD	JS16	Nickel	1.57	1.71
ZJF	JS16	Nickel	1.13	1.71
ZJH	JS16	Nickel		1.71
ZJI	JS16	Nickel		1.71
ZJK	JS16	Nickel	1.68	1.71
ZJL	JS16	Nickel		1.71
ZJM	JS16	Nickel		1.71
ZJQ	JS16	Nickel	1.05	1.71
ZJS	JS16	Nickel	1.31	1.71
ZJT	JS16	Nickel	1.45	1.71
ZJU	JS16	Nickel		1.71
ZJW	JS16	Nickel	1.48	1.71
ZJX	JS16	Nickel	1.29	1.71
AOA	JS16	Nickel	1.13	1.71
AOD	JS16	Nickel	1.63	1.71
YGS	JS16	Vanadium		3.39
YGT	JS16	Vanadium		3.39
ZJA	JS16	Vanadium		3.39
ZJB	JS16	Vanadium		3.39
ZJC	JS16	Vanadium		3.39
ZJD	JS16	Vanadium		3.39
ZJF	JS16	Vanadium		3.39
ZJH	JS16	Vanadium		3.39
ZJI	JS16	Vanadium		3.39
ZJK	JS16	Vanadium		3.39
ZJL	JS16	Vanadium		3.39
ZJM	JS16	Vanadium		3.39

**APPENDIX C-10**  
**SUMMARY OF POSITIVE**  
**SOIL METHOD BLANK CONCENTRATIONS**

Lot Number	Method	Compound	Method Blank (µg/g)	CRL (µg/g)
ZJQ	JS16	Vanadium		3.39
ZJS	JS16	Vanadium		3.39
ZJT	JS16	Vanadium		3.39
ZJU	JS16	Vanadium		3.39
ZJW	JS16	Vanadium		3.39
ZJX	JS16	Vanadium		3.39
AOA	JS16	Vanadium		3.39
AOD	JS16	Vanadium		3.39
YGS	JS16	Zinc		8.03
YGT	JS16	Zinc		8.03
ZJA	JS16	Zinc		8.03
ZJB	JS16	Zinc		8.03
ZJC	JS16	Zinc		8.03
ZJD	JS16	Zinc	7.81	8.03
ZJF	JS16	Zinc		8.03
ZJH	JS16	Zinc	7.67	8.03
ZJI	JS16	Zinc	8.00	8.03
ZJK	JS16	Zinc		8.03
ZJL	JS16	Zinc		8.03
ZJM	JS16	Zinc		8.03
ZJQ	JS16	Zinc		8.03
ZJS	JS16	Zinc		8.03
ZJT	JS16	Zinc		8.03
ZJU	JS16	Zinc		8.03
ZJW	JS16	Zinc	7.59	8.03
ZJX	JS16	Zinc	7.41	8.03
ZIX	JS16	Zinc	7.08	8.03
AOA	JS16	Zinc		8.03
AOD	JS16	Zinc		8.03
YHS	JB01	Mercury	0.036	0.05
YHR	JB01	Mercury	0.014	0.05
ZQA	JB01	Mercury	0.025	0.05
ZQE	JB01	Mercury	0.031	0.05
ZQB	JB01	Mercury	0.030	0.05
ZQC	JB01	Mercury	0.032	0.05
ZQG	JB01	Mercury	0.030	0.05
ZQI	JB01	Mercury	0.050	0.05
ZQH	JB01	Mercury	0.049	0.05
ZQL	JB01	Mercury	0.029	0.05
ZQP	JB01	Mercury	0.030	0.05
ZQS	JB01	Mercury	0.033	0.05
ZQU	JB01	Mercury	0.022	0.05

**APPENDIX C-10**  
**SUMMARY OF POSITIVE**  
**SOIL METHOD BLANK CONCENTRATIONS**

Lot Number	Method	Compound	Method Blank ( $\mu\text{g/g}$ )	CRL ( $\mu\text{g/g}$ )
ZQV	JB01	Mercury	0.025	0.05
ZQW	JB01	Mercury	0.032	0.05
ZQY	JB01	Mercury	0.025	0.05
ANB	JB01	Mercury	0.034	0.05
ANF	JB01	Mercury	0.026	0.05
<b>Cyanide</b>				
ZEF	KY01	Cyanide	0.06	0.92
ZEG	KY01	Cyanide	0.04	0.92
ZEJ	KY01	Cyanide	0.11	0.92
ZEK	KY01	Cyanide	0.25	0.92
ZEL	KY01	Cyanide	0.06	0.92
ZEM	KY01	Cyanide	0.16	0.92
ZEN	KY01	Cyanide	0.12	0.92
ZEP	KY01	Cyanide	0.05	0.92
ZES-A	KY01	Cyanide	0.07	0.92
ZES-B	KY01	Cyanide	0.07	0.92
<b>Anions</b>				
ZDC	KF10	Nitrite + Nitrate	0.19	0.6
ZDD	KF10	Nitrite + Nitrate	0.18	0.6
ZDE	KF10	Nitrite + Nitrate	0.15	0.6
ZDF	KF10	Nitrite + Nitrate	0.11	0.6
ZDG	KF10	Nitrite + Nitrate	0.15	0.6
ZDH	KF10	Nitrite + Nitrate	0.14	0.6
ZDJ	KF10	Nitrite + Nitrate	0.19	0.6
ZDK	KF10	Nitrite + Nitrate	0.19	0.6
ZDL	KF10	Nitrite + Nitrate	0.18	0.6
ZDM	KF10	Nitrite + Nitrate	0.15	0.6
ZDN	KF10	Nitrite + Nitrate	0.17	0.6
ZDO	KF10	Nitrite + Nitrate	0.12	0.6
ZDP	KF10	Nitrite + Nitrate	0.19	0.6
ZDR	KF10	Nitrite + Nitrate	0.14	0.6
ZDS	KF10	Nitrite + Nitrate	0.10	0.6
ZDT	KF10	Nitrite + Nitrate	0.17	0.6
ZDU	KF10	Nitrite + Nitrate	0.11	0.6
AHA	KT05	Sulfate	3.7	90.4
AHF	KT05	Sulfate	0.6	90.4
XHT	KT05	Chloride	1.3	6.05
AHA	KT05	Chloride	0.5	6.05
AHF	KT05	Chloride	0.06	6.05

**APPENDIX C-10**  
**SUMMARY OF POSITIVE**  
**SOIL METHOD BLANK CONCENTRATIONS**

Lot Number	Method	Compound	Method Blank (µg/g)	CRL (µg/g)
XMM	KF14	Phosphate	1.77	7.49
XMP-A	KF14	Phosphate	0.34	7.49
XMP-B	KF14	Phosphate	0.34	7.49
XMQ	KF14	Phosphate	0.09	7.49
XMT-A	KF14	Phosphate	0.36	7.49
XMT-B	KF14	Phosphate	1.68	7.49
XMU-A	KF14	Phosphate	1.78	7.49
XMU-B	KF14	Phosphate	1.78	7.49
XMY	KF14	Phosphate	2.67	7.49
XMX-A	KF14	Phosphate	3.21	7.49
XMX-B	KF14	Phosphate	1.83	7.49

The following analytes will not be considered in method blank samples due to high background concentrations:  
Aluminum, Barium, Calcium, Iron, Potassium, Magnesium, Manganese, and Sodium

\* Non-certified method; value reported is the detection limit.

Shr. ting indicates a value above the CRL.

TRPH - Total Recoverable Petroleum Hydrocarbons

CRL - Certified Reporting Limit



APPENDIX C-11  
SUMMARY OF POSITIVE  
WATER METHOD BLANK CONCENTRATIONS

Lot Number	Method	Compound	Method Blank (µg/L)	CRL (µg/L)
Volatile Organic Compounds				
YMO	UM20	Chloroform	0.36	0.50
YMW	UM20	Chloroform	0.49	0.50
YMY	UM20	Chloroform	0.47	0.50
YMZ	UM20	Chloroform	0.43	0.50
ZPA	UM20	Chloroform	0.47	0.50
ZPD	UM20	Chloroform	0.49	0.50
ZPE	UM20	Chloroform	0.41	0.50
ZPF	UM20	Chloroform	0.42	0.50
ZPG	UM20	Chloroform	0.46	0.50
ZPH	UM20	Chloroform	0.35	0.50
ZPI	UM20	Chloroform	0.44	0.50
ZPK	UM20	Chloroform	1.3	0.50
ZPL	UM20	Chloroform	0.52	0.50
ZPS	UM20	Chloroform	0.50	0.50
ZPU	UM20	Chloroform	0.40	0.50
ZPW	UM20	Chloroform	0.48	0.50
ZPX	UM20	Chloroform	0.38	0.50
ZPY	UM20	Chloroform	0.50	0.50
ZPF	UM20	Toluene	0.45	0.50
ZPG	UM20	Toluene	0.50	0.50
ZPH	UM20	Toluene	0.40	0.50
ZPI	UM20	Toluene	0.49	0.50
ZPK	UM20	Toluene	0.44	0.50
ZPL	UM20	Toluene	0.49	0.50
ZPS	UM20	Toluene	0.40	0.50
YMW	UM20	Methylene Chloride	0.90	2.3
YMZ	UM20	Methylene Chloride	0.68	2.3
ZPA	UM20	Methylene Chloride	0.49	2.3
ZPD	UM20	Methylene Chloride	0.49	2.3
ZPF	UM20	Methylene Chloride	0.49	2.3
ZPG	UM20	Methylene Chloride	0.59	2.3
ZPH	UM20	Methylene Chloride	0.34	2.3
ZPS	UM20	Methylene Chloride	0.76	2.3
ZPW	UM20	Methylene Chloride	0.54	2.3
ZPY	UM20	Methylene Chloride	1.2	2.3
YMW	UM20	1,1,1-Trichloroethane	0.7	0.5
ZPF	UM20	Trichloroethene	0.17	0.5
YMO	UM20	Acetone	4.8	13
YMW	UM20	Acetone	13	13
YMY	UM20	Acetone	4.0	13
YMZ	UM20	Acetone	11	13
ZPA	UM20	Acetone	3.6	13

**APPENDIX C-11**  
**SUMMARY OF POSITIVE**  
**WATER METHOD BLANK CONCENTRATIONS**

Lot Number	Method	Compound	Method Blank (µg/L)	CRL (µg/L)
ZPC	UM20	Acetone	5.4	13
ZPD	UM20	Acetone	6.7	13
ZPE	UM20	Acetone	3.9	13
ZPF	UM20	Acetone	9.7	13
ZPG	UM20	Acetone	11	13
ZPI	UM20	Acetone	5.4	13
ZPK	UM20	Acetone	7.6	13
ZPL	UM20	Acetone	3.3	13
ZPS	UM20	Acetone	5.7	13
ZPX	UM20	Acetone	3.7	13
<b>Semivolatile Organic Compounds</b>				
YJQ	UM18	Bis(2-ethylhexyl)phthalate	2.3	4.8
ZRA	UM18	Bis(2-ethylhexyl)phthalate	0.66	4.8
YJX	UM18	Bis(2-ethylhexyl)phthalate	2.9	4.8
ZRH	UM18	Bis(2-ethylhexyl)phthalate	1.4	4.8
ZRI	UM18	Bis(2-ethylhexyl)phthalate	1.1	4.8
ZRJ	UM18	Bis(2-ethylhexyl)phthalate	1.2	4.8
ZRO	UM18	Bis(2-ethylhexyl)phthalate	2.5	4.8
ZRR	UM18	Bis(2-ethylhexyl)phthalate	2.9	4.8
ZRP	UM18	Bis(2-ethylhexyl)phthalate	1.4	4.8
ZRV	UM18	Bis(2-ethylhexyl)phthalate	11	4.8
<b>Explosives</b>				
YXV	UW32	RDX	0.282	1.17
YXW-A	UW32	RDX	0.090	1.17
YXW-B	UW32	RDX	0.094	1.17
YXX-A	UW32	RDX	0.026	1.17
YXX-B	UW32	RDX	0.026	1.17
AFB	UW32	RDX	0.371	1.17
YXW	UW32	HMX	0.028	1.21
AFA	UW32	HMX	0.261	1.21
YXW	UW32	1,3-Dinitrobenzene	0.008	0.611
YXW	UW32	Tetryl	0.2	1.56
YXW	UW32	1,3,5-Trinitrobenzene	0.004	0.449
<b>TRPH</b>				
ZWA	I	TRPH	12.9*	165
ALN	I	TRPH	102*	165
<b>Metals</b>				
YOR	SS10	Iron	7.8	42.7
YOU	SS10	Iron	14.3	42.7

**APPENDIX C-11**  
**SUMMARY OF POSITIVE**  
**WATER METHOD BLANK CONCENTRATIONS**

Lot Number	Method	Compound	Method Blank (µg/L)	CRL (µg/L)
YOL	SS10	Aluminum	22.1	23.5
YOL	SS10	Calcium	90.1	500
YOR	SS10	Calcium	54.6	500
YOU	SS10	Calcium	42.2	500
YOW	SS10	Calcium	67.4	500
ZZA	SS10	Calcium	96.9	500
ZZE	SS10	Calcium	51.3	500
YOR	SS10	Sodium	78.4	500
XXP	SS10	Sodium	65.6	500
ZZK	SS10	Sodium	111	500
<b>Anions</b>				
XIX	TT10	Chloride	414	2120
XIX	TT10	Sulfate	3340	10000
XKR	TF22	Nitrite + Nitrate	2.0	10
ZCB-A	TF27	Phosphate	2.90	13.3
ZCB-B	TF27	Phosphate	2.90	13.3
ZCC-A	TF27	Phosphate	2.96	13.3
ZCC-B	TF27	Phosphate	3.66	13.3
ZCD-A	TF27	Phosphate	3.22	13.3
ZCD-B	TF27	Phosphate	3.22	13.3
ZCE-A	TF27	Phosphate	2.75	13.3
ZCE-B	TF27	Phosphate	3.44	13.3
ZCF-A	TF27	Phosphate	3.11	13.3
ZCF-B	TF27	Phosphate	3.78	13.3

\* Non-certified method; value reported is the detection limit.

Shading indicates a value above the CRL.

TRPH - Total Recoverable Petroleum Hydrocarbons

CRL - Certified Reporting Limit

**APPENDIX C-12**  
**CONTAMINATED SOIL METHOD BLANKS**  
**AND ASSOCIATED FIELD SAMPLES**

Lot	Method	Sample Identification	Depth (ft)	Analyte	Concentration (µg/g)
YSN	LM19	Method Blank All samples	NA	Acetone Acetone	0.020 <0.017
ZTB	LM19	Method Blank All samples	NA	Acetone Acetone	0.040 <0.017
YSV	LM19	Method Blank All samples	NA	Chloroform Chloroform	0.00090 <0.00087
YSZ	LM19	Method Blank All samples	NA	Chloroform Chloroform	0.002 <0.00087
ZTA	LM19	Method Blank	NA	Chloroform	0.001
		SB-26-011	1.0	Trichlorofluoromethane Chloroform Trichlorofluoromethane	0.01 <0.00087 0.00813
AJB	LM19	Method Blank All samples	NA	Trichlorofluoromethane Trichlorofluoromethane	0.0060 <0.0059
AJC	LM19	Method Blank All samples	NA	Trichlorofluoromethane Trichlorofluoromethane	0.0080 <0.0059
ZOX	I	Method Blank	NA	TRPH	31.2
		SB-29-010	4.0	TRPH	<21
		SB-29-007	4.0	TRPH	<21
		SB-29-028	4.0	TRPH	<21
		SB-29-030	0.0	TRPH	<21
		SB-29-030	4.0	TRPH	33.2
		SB-29-031	4.0	TRPH	34.3
		SB-29-032	4.0	TRPH	44.7
		SB-29-033	0.0	TRPH	301
		SB-29-033	3.0	TRPH	41.4
		SB-29-034	4.0	TRPH	80.5
		SB-29-035	4.0	TRPH	<21
		SB-29-036	3.0	TRPH	41.3
		SB-29-037	4.0	TRPH	33.5

**APPENDIX C-12**  
**CONTAMINATED SOIL METHOD BLANKS**  
**AND ASSOCIATED FIELD SAMPLES**

Lot	Method	Sample Identification	Depth (ft)	Analyte	Concentration (ug/g)
ZIZ	JD19	Method Blank	NA	Arsenic	0.262
		AC-38-001	0.0	Arsenic	7.03
		AC-38-001	0.0	Arsenic	6.63
		SD-47-001	0.0	Arsenic	18.0
		SD-47-002	0.0	Arsenic	21.0
		SD-47-002	0.0	Arsenic	15.0
		SS-04-005	0.0	Arsenic	17.0
		SS-27-001	0.0	Arsenic	5.46
		SS-27-001	0.0	Arsenic	7.67
		SS-27-002	0.0	Arsenic	7.28
		SS-27-003	0.0	Arsenic	16.0
		SS-27-004	0.0	Arsenic	8.11
		SS-27-005	0.0	Arsenic	7.97
		SS-27-006	0.0	Arsenic	21.0
		SS-27-007	0.0	Arsenic	15.0
		SS-28-001	0.0	Arsenic	25.0
		SS-28-001	0.0	Arsenic	24.0
		SS-28-002	0.0	Arsenic	8.18
		SS-28-003	0.0	Arsenic	32.0
		SS-28-004	0.0	Arsenic	35.0
		SS-28-005	0.0	Arsenic	45.0
		SS-28-006	0.0	Arsenic	28.0
		SS-28-007	0.0	Arsenic	20.0
		SS-28-008	0.0	Arsenic	30.0
		SS-34-001	0.0	Arsenic	17.0
		SS-34-002	0.0	Arsenic	30.0
		SS-34-002	0.0	Arsenic	38.0
		SS-34-003	0.0	Arsenic	8.69
		SS-34-004	0.0	Arsenic	7.73
		SS-34-005	0.0	Arsenic	42.0
		SS-34-006	0.0	Arsenic	18.0
		SS-38-001	0.0	Arsenic	9.88
		SS-38-002	0.0	Arsenic	7.34
		SS-38-003	0.0	Arsenic	6.25
		SS-38-004	0.0	Arsenic	6.19

The following analytes will not be considered in method blank samples due to high background concentrations:  
Aluminum, Barium, Calcium, Iron, Potassium, Magnesium, Manganese, and Sodium.

TRPH - Total Recoverable Petroleum Hydrocarbons

**APPENDIX C-13  
CONTAMINATED WATER METHOD BLANKS  
AND ASSOCIATED FIELD SAMPLES**

<b>Lot</b>	<b>Method</b>	<b>Sample Identification</b>	<b>Depth (ft)</b>	<b>Analyte</b>	<b>Concentration (µg/L)</b>
<b>ZPL</b>	<b>UM20</b>	<b>Method Blank</b>	<b>NA</b>	<b>Chloroform</b>	<b>0.52</b>
		<b>SW-47-001</b>	<b>0.0</b>	<b>Chloroform</b>	<b>1.00</b>
<b>ZRI</b>	<b>UM18</b>	<b>Method Blank</b>	<b>NA</b>	<b>Bis(2-ethylhexyl)phthalate</b>	<b>6.6</b>
		<b>SW-14-001</b>	<b>0.0</b>	<b>Bis(2-ethylhexyl)phthalate</b>	<b>&lt;4.8</b>
		<b>SW-14-002</b>	<b>0.0</b>	<b>Bis(2-ethylhexyl)phthalate</b>	<b>&lt;4.8</b>

**NA - Not Applicable**

**APPENDIX C-14  
TRIP BLANK SUMMARY**

Sample ID	Sample Date	Method	Analyte(s)	Concentration	Units
SOBK8	5/31/92	8240	No Analytes Detected	NA	
SOBK10	6/9/92	8240	No Analytes Detected	NA	
SOBK2	6/11/92	8240	No Analytes Detected	NA	
SOBK3	6/12/92	8240	No Analytes Detected	NA	
SOBK5	6/15/92	8240	No Analytes Detected	NA	
SOBK4	6/16/92	8240	No Analytes Detected	NA	
SOBK6	6/16/92	8240	No Analytes Detected	NA	
SOBK9	6/17/92	8240	No Analytes Detected	NA	
SOBK7	6/18/92	8240	No Analytes Detected	NA	
SOBK11	6/23/92	8240	No Analytes Detected	NA	
SOBK12	6/23/92	8240	No Analytes Detected	NA	
SOBK13	6/24/92	8240	No Analytes Detected	NA	
SOBK14	6/24/92	8240	No Analytes Detected	NA	
SOBK16	6/25/92	8240	No Analytes Detected	NA	
SOBK18	6/26/92	8240	No Analytes Detected	NA	
SOBK19	6/28/92	8240	No Analytes Detected	NA	
SOBK20	6/29/92	8240	No Analytes Detected	NA	
SOBK22	6/30/92	8240	No Analytes Detected	NA	
SOBK23	6/30/92	8240	No Analytes Detected	NA	
SOBK25	7/1/92	8240	No Analytes Detected	NA	
SOBK24	7/2/92	8240	No Analytes Detected	NA	
SOBK26	7/7/92	8240	No Analytes Detected	NA	

**APPENDIX C-14  
TRIP BLANK SUMMARY**

Sample ID	Sample Date	Method	Analyte(s)	Concentration	Units
SOBK27	7/8/92	8240	No Analytes Detected	NA	
SOBK28	7/9/92	8240	No Analytes Detected	NA	
SOBK29	7/9/92	8240	No Analytes Detected	NA	
SOBK30	7/10/92	8240	No Analytes Detected	NA	
SOBK31	7/10/92	8240	No Analytes Detected	NA	
SOBK32	7/10/92	8240	No Analytes Detected	NA	
SOBK33	7/11/92	8240	No Analytes Detected	NA	
SOBK34	7/11/92	8240	No Analytes Detected	NA	
SOBK35	7/12/92	8240	No Analytes Detected	NA	
SOBK36	7/13/92	8240	Toluene	0.73	µg/L
SS-37-010 (dup)	7/13/92	8240	Toluene	<0.0008	µg/g
SS-37-011	7/13/92	8240	Toluene	<0.0008	µg/g
SOBK37	7/13/92	8240	Toluene	0.60	µg/L
SW-14-002	7/13/92	8240	Toluene	<0.0008	µg/g
SOBK38	7/14/92	8240	Toluene	0.73	µg/L
SS-28-002	7/14/92	8240	Toluene	<0.0008	µg/g
SOBK39	7/15/92	8240	Toluene	1.03	µg/L
SS-27-001 (dup)	7/15/92	8240	Toluene	<0.0008	µg/g
SS-27-002	7/15/92	8240	Toluene	<0.0008	µg/g
SS-27-003	7/15/92	8240	Toluene	<0.0008	µg/g
SS-27-004	7/15/92	8240	Toluene	<0.0008	µg/g
SS-27-005	7/15/92	8240	Toluene	<0.0008	µg/g
SS-27-006	7/15/92	8240	Toluene	<0.0008	µg/g
SS-27-007	7/15/92	8240	Toluene	<0.0008	µg/g



**APPENDIX C-14  
TRIP BLANK SUMMARY**

Sample ID	Sample Date	Method	Analyte(s)	Concentration	Units
SOBK40	7/16/92	8240	Toluene	0.86	µg/L
			Methylene Chloride	2.4	µg/L
SW-47-001	7/16/92	8240	Toluene	<0.98	µg/L
			Methylene Chloride	200.0	µg/L
SOBK41	7/21/92	8240	Toluene	0.54	µg/L
SS-38-001	7/21/92	8240	Toluene	<0.0008	µg/g
AC-38-001	7/21/92	8240	Toluene	<0.0008	µg/g
AC-38-001 (dup)	7/21/92	8240	Toluene	<0.0008	µg/g
SOBK42	7/21/92	8240	Toluene	0.75	µg/L
SS-04-001	7/21/92	8240	Toluene	0.0049	µg/g
SS-04-002	7/21/92	8240	Toluene	0.002	µg/g
SS-04-003	7/21/92	8240	Toluene	0.0028	µg/g
SS-04-004	7/21/92	8240	Toluene	0.0033	µg/g
SS-04-005 (dup)	7/21/92	8240	Toluene	<0.0008	µg/g
SOBK43	7/29/92	8240	Toluene	0.88	µg/L
SB-01-008	7/29/92	8240	Toluene	<0.50	µg/g
SOBK50	7/29/92	8240	No Analytes Detected	NA	
SOBK44	7/30/92	8240	Toluene	0.98	µg/L
SB-01-006	7/30/92	8240	Toluene	<0.50	µg/g
SOBK45	7/30/92	8240	Toluene	0.69	µg/L
SB-01-007	7/30/92	8240	Toluene	<0.50	µg/g
WW2	7/30/92	8240	Toluene	<0.50	µg/g
SOBK51	8/4/92	8240	Chloroform	1.1	µg/L
EP-01-96	8/4/92	8240	Chloroform	<0.50	µg/g
EP-01-191 (dup)	8/4/92	8240	Chloroform	<0.50	µg/g
SOBK52	8/5/92	8240	No Analytes Detected	NA	
SOBK53	8/6/92	8240	No Analytes Detected	NA	

**APPENDIX C-14  
TRIP BLANK SUMMARY**

Sample ID	Sample Date	Method	Analyte(s)	Concentration	Units
SOBK54	8/7/92	8240	No Analytes Detected	NA	
SOBK55	8/8/92	8240	No Analytes Detected	NA	
SOBK56	8/9/92	8240	No Analytes Detected	NA	
SOBK57	8/10/92	8240	No Analytes Detected	NA	
SOBK58	8/11/92	8240	No Analytes Detected	NA	

NA - Not Applicable

**APPENDIX C-15  
SOURCE WATER RESULTS**

<b>Well Name</b>	<b>Date Sampled</b>	<b>Parameter Detected</b>	<b>Concentration (ug/L)</b>
<b>WW-3 (a)</b>	<b>5/6/92</b>	<b>Arsenic</b>	<b>2.88</b>
			<b>2.77</b>
		<b>Barium</b>	<b>60.6</b>
			<b>61.9</b>
		<b>Calcium</b>	<b>98,800</b>
			<b>100,000</b>
		<b>Potassium</b>	<b>3,450</b>
			<b>3,470</b>
		<b>Magnesium</b>	<b>35,600</b>
			<b>36,100</b>
		<b>Manganese</b>	<b>12.6</b>
			<b>6.62</b>
		<b>Sodium</b>	<b>96,100</b>
			<b>97,800</b>
		<b>Nitrate+Nitrite</b>	<b>3,200</b>
			<b>3,200</b>
		<b>Phosphate</b>	<b>14.8</b>
			<b>16.8</b>
		<b>Chloride</b>	<b>240,000</b>
			<b>240,000</b>
		<b>Sulfate</b>	<b>97,300</b>
			<b>97,300</b>
<b>WW-2 (b)</b>	<b>7/30/92</b>	<b>Lead</b>	<b>7.48</b>
		<b>Barium</b>	<b>53.9</b>
		<b>Calcium</b>	<b>63,000</b>
		<b>Copper</b>	<b>8.99</b>
		<b>Potassium</b>	<b>2,030</b>
		<b>Magnesium</b>	<b>19,200</b>
		<b>Sodium</b>	<b>438,000</b>
		<b>Nitrate+Nitrite</b>	<b>2,800</b>
		<b>Chloride</b>	<b>66,000</b>
		<b>Sulfate</b>	<b>28,400</b>

(a) - sampled and reported in duplicate

(b) - well used after WW-3 was struck by lightning, destroying the pump

**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSATE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	EP-01-007	5.0	5/30/90	Lead	6.96 µg/g
				Arsenic	5.67 µg/g
				Zinc	30.2 µg/g
Equipment Rinsate Blank	EP-01-007	5.0	5/30/90	Arsenic	3.84 µg/L
				Barium	62.0 µg/L *
				Calcium	95,700 µg/L *
				Chloride	227,000 µg/L *
				Lead	2.3 µg/L
				Magnesium	35,600 µg/L *
				Nitrite + Nitrate	3,110 µg/L *
				Potassium	4,090 µg/L *
				Selenium	4.7 µg/L
				Sodium	95,200 µg/L *
				Sulfate	99,200 µg/L *
				Zinc	143 µg/L
Sample Preceding EB	EP-01-011	6.0	5/31/92	Arsenic	5.19 µg/g
				Copper	16.7 µg/g
				Iron	8350 µg/g
				Lead	6.86 µg/g
				Zinc	30.1 µg/g
Equipment Rinsate Blank	EP-01-011	6.0	5/31/92	Arsenic	4.26 µg/L
				Barium	57.4 µg/L *
				Calcium	98,600 µg/L *
				Chloride	242,000 µg/L *
				Copper	8.58 µg/L
				Iron	169 µg/L
				Lead	2.9 µg/L
				Magnesium	37,300 µg/L *
				Nitrite + Nitrate	3,200 µg/L *
				Phosphate	17.9 µg/L *
				Potassium	4,350 µg/L *
				Selenium	4 µg/L
				Sodium	101,000 µg/L *
				Sulfate	108,000 µg/L *
				Zinc	166 µg/L

**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSATE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	EP-01-014	7.0	6/1/92	Lead	203 µg/g
				Copper	1020 µg/g
				Iron	18600 µg/g
				Zinc	2260 µg/g
Equipment Rinsate Blank	EP-01-014	7.0	6/1/92	Lead	2.4 µg/L
				Selenium	3.5 µg/L
				Arsenic	2.77 µg/L *
				Barium	60.2 µg/L *
				Calcium	979,000 µg/L *
				Copper	13.5 µg/L
				Iron	206 µg/L
				Potassium	4,240 µg/L *
				Magnesium	37,000 µg/L *
				Sodium	99,300 µg/L *
				Zinc	163 µg/L
				Nitrite + Nitrate	3,390 µg/L *
				Phosphate	16.5 µg/L *
				Chloride	241,000 µg/L *
				Sulfate	108,000 µg/L *
Sample Preceding EB	EP-01-018	6.5	6/2/92	Lead	54000 µg/g
				Zinc	5200 µg/g
Equipment Rinsate Blank	EP-01-018	6.5	6/2/92	Lead	6.6 µg/L
				Barium	59.1 µg/L *
				Calcium	94,200 µg/L *
				Potassium	3,710 µg/L *
				Magnesium	36,000 µg/L *
				Sodium	92,700 µg/L *
				Vanadium	13.2 µg/L
				Zinc	27.8 µg/L
				Nitrite + Nitrate	2,910 µg/L *
				Phosphate	15.9 µg/L *
				Chloride	236,000 µg/L *
				Sulfate	106,000 µg/L *

**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSATE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	EP-01-021	2.0	6/3/92	Arsenic	4.40 µg/g
				Iron	16200 µg/g
				Lead	58.0 µg/g
Equipment Rinsate Blank	EP-01-021	2.0	6/3/92	Arsenic	4.37 µg/L
				Barium	60.0 µg/L *
				Calcium	99,600 µg/L *
				Iron	44.3 µg/L
				Lead	1.5 µg/L
				Magnesium	37,600 µg/L *
				Potassium	4,550 µg/L *
				Sodium	98,700 µg/L *
				Nitrite + Nitrate	3,160 µg/L *
				Phosphate	14.5 µg/L *
				Chloride	243,000 µg/L *
				Sulfate	110,000 µg/L *
Sample Preceding EB	EP-01-025	4.5	6/4/92	Arsenic	4.20 µg/g
				Iron	45200 µg/g
Equipment Rinsate Blank	EP-01-025	4.5	6/4/92	Selenium	3.3 µg/L
				Arsenic	3.62 µg/L
				Barium	63.0 µg/L *
				Calcium	97,900 µg/L *
				Iron	134 µg/L
				Potassium	4,350 µg/L *
				Magnesium	36,400 µg/L *
				Sodium	97,000 µg/L *
				Nitrite + Nitrate	3,120 µg/L *
				Phosphate	13.8 µg/L *
				Chloride	230,000 µg/L *
				Sulfate	100,000 µg/L *

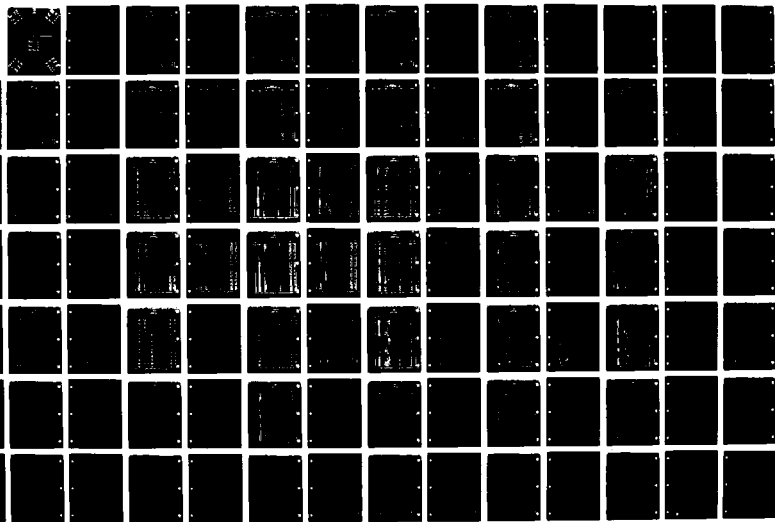
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TOOLE ARMY DEPOT-NORTH AREA SUSPECTED RELEASES SNAUS 8713  
VOLUME 2 APPENDICES A - J REVISION(U) MONTGOMERY  
WATSON WALNUT CREEK CA DEC 93 XA-USAEC

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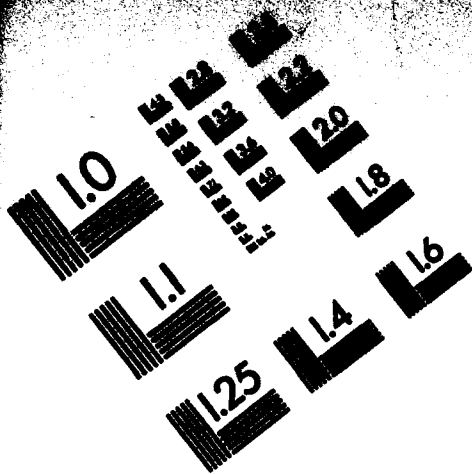
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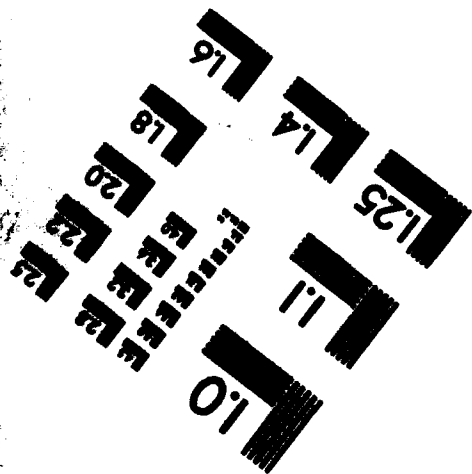
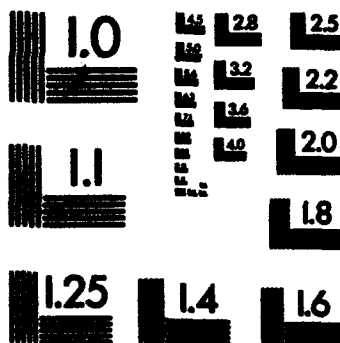
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Silver Spring, Maryland 20910  
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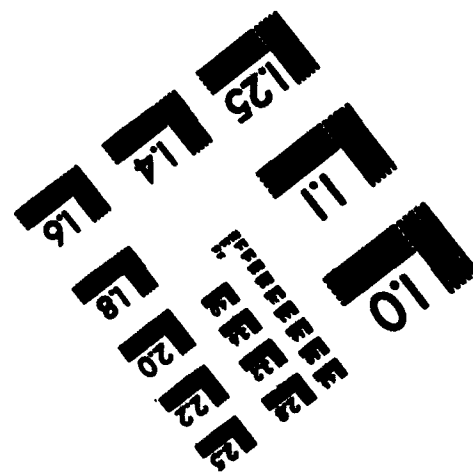
Centimeter



Inches



MANUFACTURED TO AIIM STANDARDS  
BY APPLIED IMAGE, INC.





**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSATE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	EP-01-029	5.0	6/9/92	Lead	19.0 µg/g
Equipment Rinsate Blank	EP-01-029	5.0	6/9/92	Lead	1.4 µg/L
				Arsenic	2.77 µg/L *
				Barium	62.0 µg/L *
				Calcium	96,400 µg/L *
				Potassium	4,300 µg/L *
				Magnesium	35,900 µg/L *
				Sodium	95,500 µg/L *
				Nitrite + Nitrate	3,020 µg/L *
				Phosphate	14.5 µg/L *
				Chloride	235,000 µg/L *
				Sulfate	101,000 µg/L *
Sample Preceding EB	EP-01-030	3.0	6/10/92	Lead	130 µg/g
Equipment Rinsate Blank	EP-01-030	3.0	6/10/92	Lead	1.5 µg/L
				Barium	61.4 µg/L *
				Calcium	95,600 µg/L *
				Potassium	4,180 µg/L *
				Magnesium	35,900 µg/L *
				Sodium	95,500 µg/L *
				Nitrite + Nitrate	3,100 µg/L *
				Chloride	233,000 µg/L *
				Sulfate	101,000 µg/L *
Sample Preceding EB	EP-01-034	3.5	6/11/92	Arsenic	5.50 µg/g
				Iron	33700 µg/g
				Zinc	53.6 µg/g
Equipment Rinsate Blank	EP-01-034	3.5	6/11/92	Arsenic	4.48 µg/L
				Barium	62.0 µg/L *
				Calcium	95,400 µg/L *
				Iron	44.6 µg/L
				Potassium	4,100 µg/L *
				Magnesium	35,800 µg/L *
				Sodium	95,400 µg/L *
				Zinc	187 µg/L
				Nitrite + Nitrate	2,670 µg/L *
				Phosphate	13.8 µg/L *
				Chloride	230,000 µg/L *
				Sulfate	99,600 µg/L *

**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSATE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	SB-29-005	0.0	6/11/92	Lead	28.0 µg/g
				Arsenic	9.05 µg/g
Equipment Rinseate Blank	SB-29-005	0.0	6/11/92	Lead	1.5 µg/L
				Arsenic	3.41 µg/L
				Barium	63.0 µg/L *
				Calcium	95,900 µg/L *
				Potassium	4,240 µg/L *
				Magnesium	36,100 µg/L *
				Sodium	96,400 µg/L *
				Nitrite + Nitrate	3,080 µg/L *
				Phosphate	16.5 µg/L *
				Chloride	228,000 µg/L *
				Sulfate	101,000 µg/L *
Sample Preceding EB	EP-01-038	0.5	6/12/92	Arsenic	2.69 µg/g
				Lead	140 µg/g
Equipment Rinseate Blank	EP-01-038	0.5	6/12/92	Zinc	1600 µg/g
				Lead	1.8 µg/L
				Arsenic	3.52 µg/L
				Barium	62.8 µg/L *
				Calcium	97,100 µg/L *
				Potassium	4,360 µg/L *
				Magnesium	36,200 µg/L *
				Sodium	96,600 µg/L *
				Zinc	181 µg/L
				Nitrite + Nitrate	2,580 µg/L *
				Chloride	240,000 µg/L *
				Sulfate	101,000 µg/L *
Sample Preceding EB	SB-29-017	3.0	6/12/92	Arsenic	9.15 µg/g
				Zinc	25.4 µg/g
Equipment Rinseate Blank	SB-29-017	3.0	6/12/92	Arsenic	2.99 µg/L
				Barium	63.3 µg/L *
				Calcium	97,380 µg/L *
				Potassium	4,070 µg/L *
				Magnesium	36,400 µg/L *
				Sodium	97,600 µg/L *
				Zinc	30.3 µg/L

**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSATE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	EP-01-042	2.0	6/13/92	Lead	932 µg/g
				Vanadium	29.3 µg/g
				Zinc	131 µg/g
Equipment Rinseate Blank	EP-01-042	2.0	6/13/92	Lead	7.0 µg/L
				Arsenic	3.2 µg/L
				Barium	59.9 µg/L *
				Calcium	939,000 µg/L *
				Potassium	3,960 µg/L *
				Magnesium	35,500 µg/L *
				Sodium	92,800 µg/L *
				Vanadium	12.4 µg/L
				Zinc	172 µg/L
				Nitrite + Nitrate	2,780 µg/L *
				Phosphate	13.8 µg/L *
				Chloride	234,000 µg/L *
				Sulfate	99,600 µg/L *
Sample Preceding EB	SB-29-024	0.0	6/13/92	Lead	7.65 µg/g
				Zinc	20.3 µg/g
Equipment Rinseate Blank	SB-29-024	0.0	6/13/92	Lead	1.4 µg/L
				Barium	59.7 µg/L *
				Calcium	92,800 µg/L *
				Potassium	3,620 µg/L *
				Magnesium	35,200 µg/L *
				Sodium	92,100 µg/L *
				Zinc	59.7 µg/L
Sample Preceding EB	EP-01-046	3.0	6/14/92	Lead	19.0 µg/g
				Zinc	61.8 µg/g
Equipment Rinseate Blank	EP-01-046	3.0	6/14/92	Lead	3.50 µg/L
				Barium	60.1 µg/L *
				Calcium	91,200 µg/L *
				Potassium	3,600 µg/L *
				Magnesium	34,700 µg/L *
				Sodium	90,900 µg/L *
				Zinc	29.3 µg/L
				Nitrite + Nitrate	2,990 µg/L *
				Phosphate	14.5 µg/L *
				Chloride	233,000 µg/L *
				Sulfate	99,400 µg/L *

**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSATE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	SB-29-009	0.0	6/14/92	Copper	16.6 µg/g
				Vanadium	16.2 µg/g
				Zinc	68.3 µg/g
Equipment Rinseate Blank	SB-29-009	0.0	6/14/92	Barium	58.1 µg/L *
				Calcium	91,200 µg/L *
				Copper	11.3 µg/L
				Potassium	3,760 µg/L *
				Magnesium	34,500 µg/L *
				Sodium	89,800 µg/L *
				Vanadium	14.2 µg/L
				Zinc	47.7 µg/L
Sample Preceding EB	EP-01-051	2.5	6/15/92	Lead	130 µg/g
				Vanadium	19.4 µg/g
				Zinc	791 µg/g
Equipment Rinseate Blank	EP-01-051	2.5	6/15/92	Lead	2.3 µg/L
				Barium	61.8 µg/L
				Calcium	92,600 µg/L *
				Potassium	3,500 µg/L *
				Magnesium	35,100 µg/L *
				Sodium	92,400 µg/L *
				Vanadium	11.6 µg/L
				Zinc	26.6 µg/L
				Nitrite + Nitrate	3,000 µg/L *
				Chloride	233,000 µg/L *
				Sulfate	99,800 µg/L *
Sample Preceding EB	SB-29-028	0.0	6/15/92	Vanadium	14.8 µg/g
				Zinc	38.8 µg/g
Equipment Rinseate Blank	SB-29-028	0.0	6/15/92	Barium	59.3 µg/L *
				Calcium	94,500 µg/L *
				Potassium	3,900 µg/L *
				Magnesium	36,000 µg/L *
				Sodium	92,600 µg/L *
				Vanadium	12.3 µg/L
				Zinc	39.3 µg/L

**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSATE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	EP-01-053	3.5	6/16/92	Arsenic	98 µg/g
				Zinc	µg/g
Equipment Rinse Blank	EP-01-053	3.5	6/16/92	Arsenic	µg/L
				Barium	66.0 µg/L *
				Calcium	94,400 µg/L *
				Potassium	3,520 µg/L *
				Magnesium	35,500 µg/L *
				Sodium	93,500 µg/L *
				Zinc	27.8 µg/L
				Nitrite + Nitrate	3,000 µg/L *
				Phosphate	13.8 µg/L *
				Chloride	233,000 µg/L *
				Sulfate	10,000 µg/L *
Sample Preceding EB	EP-01-055	2.0	6/17/92	Lead	9.82 µg/g
				Vanadium	6.06 µg/g
				Zinc	41.0 µg/g
Equipment Rinse Blank	EP-01-055	2.0	6/17/92	Lead	3.8 µg/L
				Barium	60.0 µg/L *
				Calcium	93,800 µg/L *
				Potassium	3,550 µg/L *
				Magnesium	35,300 µg/L *
				Sodium	92,300 µg/L *
				Vanadium	12.4 µg/L
				Zinc	25.8 µg/L
				Nitrite + Nitrate	2,990 µg/L *
				Phosphate	15.9 µg/L *
				Chloride	234,000 µg/L *
				Sulfate	101,000 µg/L *
Sample Preceding EB	SB-29-031	0.0	6/17/92	Iron	10,000 µg/g
				Vanadium	19.3 µg/g
				Zinc	57.6 µg/g
Equipment Rinse Blank	SB-29-031	0.0	6/17/92	Barium	60.6 µg/L *
				Calcium	94,900 µg/L *
				Iron	51.0 µg/L
				Potassium	3,510 µg/L *
				Magnesium	35,900 µg/L *
				Sodium	93,600 µg/L *
				Vanadium	12.3 µg/L
				Zinc	68.5 µg/L

**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	EP-01-059	0.0	6/18/92	Lead	40.1 µg/g
				Vanadium	11.9 µg/g
				Zinc	254 µg/g
Equipment Rinse Blank	EP-01-059	0.0	6/18/92	Lead	2.5 µg/L
				Barium	59.5 µg/L *
				Calcium	92,300 µg/L *
				Potassium	3,440 µg/L *
				Magnesium	34,900 µg/L *
				Sodium	91,600 µg/L *
				Vanadium	11.7 µg/L
				Zinc	27.5 µg/L
				Nitrite + Nitrate	2,940 µg/L *
				Phosphate	13.8 µg/L *
				Chloride	246,000 µg/L *
				Sulfate	97,000 µg/L *
Sample Preceding EB	EP-01-064	5.0	6/23/92	Barium	235 µg/g
				Magnesium	11000 µg/g
				Phosphate	730 µg/g
				Chloride	27.7 µg/g
Equipment Rinse Blank	EP-01-064	5.0	6/23/92	Barium	62.2 µg/L
				Calcium	97,600 µg/L *
				Potassium	3,140 µg/L *
				Magnesium	36,900 µg/L
				Sodium	97,800 µg/L *
				Nitrite + Nitrate	3,040 µg/L *
				Phosphate	20.4 µg/L
				Chloride	251,000 µg/L
				Sulfate	98,700 µg/L
Sample Preceding EB	SB-26-007	0.0	6/23/92	Lead	66.4 µg/g
				Zinc	178 µg/g
Equipment Rinse Blank	SB-26-007	0.0	6/23/92	Lead	7.8 µg/L
				Barium	63.6 µg/L *
				Calcium	99,900 µg/L *
				Potassium	3,380 µg/L *
				Magnesium	37,700 µg/L *
				Sodium	99,300 µg/L *
				Zinc	34.3 µg/L

**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSATE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	EP-01-069	5.5	6/24/92	Zinc	55.5 µg/g
Equipment Rinsate Blank	EP-01-069	5.5	6/24/92	Barium	63.7 µg/L *
				Calcium	100,000 µg/L *
				Potassium	3,610 µg/L *
				Magnesium	37,800 µg/L *
				Sodium	99,100 µg/L *
				Zinc	50.0 µg/L
				Nitrite + Nitrate	2,960 µg/L *
				Phosphate	20.4 µg/L *
				Chloride	251,000 µg/L *
				Sulfate	98,700 µg/L *
Sample Preceding EB	SB-26-012	0.0	6/24/92	Iron	5460 µg/g
				Lead	56.4 µg/g
				Zinc	396 µg/g
Equipment Rinsate Blank	SB-26-012	0.0	6/24/92	Lead	15.7 µg/L
				Barium	61.4 µg/L *
				Calcium	97,600 µg/L *
				Iron	92.1 µg/L
				Potassium	3490 µg/L *
				Magnesium	37,000 µg/L *
				Sodium	96,800 µg/L *
				Zinc	109 µg/L
Sample Preceding EB	EP-01-071	2.5	6/25/02	Arsenic	2.10 µg/g
				Zinc	74.4 µg/g
Equipment Rinsate Blank	EP-01-071	2.5	6/25/02	Arsenic	4.05 µg/L
				Barium	61.5 µg/L *
				Calcium	97,600 µg/L *
				Potassium	3,680 µg/L *
				Magnesium	37,000 µg/L *
				Sodium	967,000 µg/L *
				Zinc	44.1 µg/L
				Nitrite + Nitrate	2,760 µg/L *
				Phosphate	18.3 µg/L *
				Chloride	254,000 µg/L *
				Sulfate	101,000 µg/L *

**APPENDIX C-16  
CONTAMINATED EQUIPMENT RINSATE  
BLANKS AND ASSOCIATED SAMPLES**

<b>Sample Type</b>	<b>Sample Identification</b>	<b>Depth (ft)</b>	<b>Date Sampled</b>	<b>Analyte</b>	<b>Concentration</b>
<b>Sample Preceding EB</b>	<b>SB-45-001</b>	<b>13.0</b>	<b>6/25/92</b>	<b>Zinc</b>	<b>47.0 µg/g</b>
				<b>Iron</b>	<b>12700 µg/g</b>
<b>Equipment Rinse: Blank</b>	<b>SB-45-001</b>	<b>13.0</b>	<b>6/25/92</b>	<b>Barium</b>	<b>63.0 µg/L *</b>
				<b>Calcium</b>	<b>99,000 µg/L *</b>
				<b>Iron</b>	<b>45.3 µg/L</b>
				<b>Potassium</b>	<b>3,510 µg/L *</b>
				<b>Magnesium</b>	<b>37,800 µg/L *</b>
				<b>Sodium</b>	<b>98,600 µg/L *</b>
				<b>Zinc</b>	<b>59.1 µg/L</b>
<b>Sample Preceding EB</b>	<b>EP-01-074</b>	<b>2.5</b>	<b>6/26/92</b>	<b>Lead</b>	<b>2860 µg/g</b>
				<b>Zinc</b>	<b>2930 µg/g</b>
<b>Equipment Rinse: Blank</b>	<b>EP-01-074</b>	<b>2.5</b>	<b>6/26/92</b>	<b>Lead</b>	<b>101 µg/L</b>
				<b>Barium</b>	<b>64.6 µg/L *</b>
				<b>Calcium</b>	<b>100,000 µg/L *</b>
				<b>Potassium</b>	<b>2,980 µg/L *</b>
				<b>Magnesium</b>	<b>38,400 µg/L *</b>
				<b>Sodium</b>	<b>102,000 µg/L *</b>
				<b>Zinc</b>	<b>42.8 µg/L</b>
				<b>Nitrite + Nitrate</b>	<b>2,560 µg/L *</b>
				<b>Phosphate</b>	<b>19.7 µg/L *</b>
				<b>Chloride</b>	<b>250,000 µg/L *</b>
				<b>Sulfate</b>	<b>101,000 µg/L *</b>
<b>Sample Preceding EB</b>	<b>SB-42-006</b>	<b>0.0</b>	<b>6/26/92</b>	<b>Arsenic</b>	<b>20.0 µg/g</b>
				<b>Copper</b>	<b>5700 µg/g</b>
				<b>Iron</b>	<b>23700 µg/g</b>
				<b>Lead</b>	<b>39000 µg/g</b>
				<b>Zinc</b>	<b>1990 µg/g</b>
<b>Equipment Rinse: Blank</b>	<b>SB-42-006</b>	<b>0.0</b>	<b>6/26/92</b>	<b>Lead</b>	<b>4.2 µg/L</b>
				<b>Arsenic</b>	<b>3.41 µg/L</b>
				<b>Barium</b>	<b>64.5 µg/L *</b>
				<b>Calcium</b>	<b>101,000 µg/L *</b>
				<b>Copper</b>	<b>8.86 µg/L</b>
				<b>Iron</b>	<b>51.4 µg/L</b>
				<b>Potassium</b>	<b>3,570 µg/L *</b>
				<b>Magnesium</b>	<b>38,200 µg/L *</b>
				<b>Sodium</b>	<b>100,000 µg/L *</b>
				<b>Zinc</b>	<b>49.0 µg/L</b>



**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSATE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	SB-42-010	0.0	6/27/92	Copper	1360 µg/g
				Iron	10600 µg/g
				Lead	8900 µg/g
				Zinc	1060 µg/g
Equipment Rinseate Blank	SB-42-010	0.0	6/27/92	Lead	3.30 µg/L
				Barium	64.7 µg/L *
				Calcium	98,000 µg/L *
				Copper	11.4 µg/L
				Iron	42.0 µg/L
				Potassium	3,350 µg/L *
				Magnesium	36,900 µg/L *
				Sodium	96,900 µg/L *
				Zinc	50.0 µg/L
Sample Preceding EB	EP-01-088	0.0	6/28/92	Iron	8310 µg/g
				Lead	1450 µg/g
Equipment Rinseate Blank	EP-01-088	0.0	6/28/92	Lead	4.0 µg/L
				Barium	58.5 µg/L *
				Calcium	99,700 µg/L *
				Iron	48.8 µg/L
				Potassium	3,580 µg/L *
				Magnesium	38,200 µg/L *
				Sodium	99,200 µg/L *
				Nitrite + Nitrate	2,900 µg/L *
				Phosphate	19.2 µg/L *
				Chloride	299,000 µg/L *
				Sulfate	106,000 µg/L *
Sample Preceding EB	SS-26-023	0.0	6/29/92	Copper	825 µg/g
				Iron	7970 µg/g
				Lead	1000 µg/g
				Zinc	528 µg/g
Equipment Rinseate Blank	SS-26-023	0.0	6/29/92	Lead	22.3 µg/L
				Barium	62.3 µg/L *
				Calcium	98,500 µg/L *
				Copper	11.4 µg/L
				Iron	59.0 µg/L
				Potassium	3,630 µg/L *
				Magnesium	37,300 µg/L *
				Sodium	97,300 µg/L *
				Zinc	74.5 µg/L

**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSATE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	EP-01-082	5.0	6/30/92	Lead	9.64 µg/g
				Iron	9850 µg/g
Equipment Rinsate Blank	EP-01-082	5.0	6/30/92	Lead	1.5 µg/L
				Barium	59.3 µg/L *
				Calcium	104,000 µg/L *
				Iron	60.6 µg/L
				Potassium	3,880 µg/L *
				Magnesium	40,500 µg/L *
				Sodium	107,000 µg/L *
				Nitrite + Nitrate	2,730 µg/L *
				Phosphate	16.9 µg/L *
				Chloride	259,000 µg/L *
				Sulfate	109,000 µg/L *
Sample Preceding EB	EP-01-095	7.0	7/1/92	Lead	16.0 µg/g
				Iron	16600 µg/g
Equipment Rinsate Blank	EP-01-095	7.0	7/1/92	Lead	2.0 µg/L
				Barium	56.7 µg/L *
				Calcium	98,800 µg/L *
				Iron	116 µg/L
				Potassium	3,690 µg/L *
				Magnesium	38,500 µg/L *
				Sodium	101,000 µg/L *
				Nitrite + Nitrate	2,940 µg/L *
				Phosphate	16.2 µg/L *
				Chloride	259,000 µg/L *
				Sulfate	109,000 µg/L *
Sample Preceding EB	SS-26-040	0.0	7/7/92	Iron	9500 µg/g
				Lead	145 µg/g
				Zinc	310 µg/g
Equipment Rinsate Blank	SS-26-040	0.0	7/7/92	Lead	5.7 µg/L
				Barium	61.7 µg/L *
				Calcium	94,300 µg/L *
				Iron	44.3 µg/L
				Potassium	2,530 µg/L
				Magnesium	35,700 µg/L *
				Sodium	94,200 µg/L *
				Zinc	187 µg/L

**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSATE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	SS-19-010	0.0	7/8/92	Lead	6.24 µg/g
				Copper	8.22 µg/g
				Iron	5690 µg/g
				Zinc	38.5 µg/g
Equipment Rinsate Blank	SS-19-010	0.0	7/8/92	Lead	3.4 µg/L
				Selenium	3.5 µg/L
				Arsenic	2.77 µg/L *
				Barium	61.0 µg/L *
				Calcium	94.200 µg/L *
				Copper	39.1 µg/L
				Iron	163 µg/L
				Potassium	2.990 µg/L *
				Magnesium	35.700 µg/L *
				Sodium	94.200 µg/L *
				Zinc	155 µg/L
				Nitrite + Nitrate	2.570 µg/L *
				Phosphate	17.9 µg/L *
				Chloride	250.000 µg/L *
				Sulfate	103.000 µg/L *
				Chloroform	0.61 µg/L
Sample Preceding EB	SW-45-003	0.0	7/9/92	Lead	1.63 µg/g
Equipment Rinsate Blank	SW-45-003	0.0	7/9/92	Lead	3.3 µg/L
				Selenium	4.8 µg/L
				Barium	59.7 µg/L *
				Calcium	92.500 µg/L *
				Copper	8.58 µg/L
				Iron	55.1 µg/L
				Potassium	2.750 µg/L *
				Magnesium	35.400 µg/L *
				Sodium	93.500 µg/L *
				Zinc	302 µg/L

**APPENDIX C-16  
CONTAMINATED EQUIPMENT RINSATE  
BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	SS-20-016	0.0	7/10/92	Arsenic	7.57 µg/g
				Copper	152 µg/g
				Iron	9190 µg/g
				Lead	1260 µg/g
				Zinc	465 µg/g
Equipment Rinsate Blank	SS-20-016	0.0	7/10/92	Lead	2.1 µg/L
				Selenium	4.8 µg/L
				Arsenic	3.09 µg/L
				Barium	59.5 µg/L *
				Calcium	92,100 µg/L *
				Copper	15 µg/L
				Iron	49.6 µg/L
				Potassium	2,650 µg/L *
				Magnesium	35,300 µg/L *
				Sodium	93,400 µg/L *
Sample Preceding EB	B-1	293.0	7/11/92	Zinc	62.6 µg/L
				Selenium	5.54 µg/g
				Zinc	524 µg/g
Equipment Rinsate Blank	B-1	0.0	7/11/92	Selenium	4.6 µg/L
				Barium	68.7 µg/L *
				Calcium	93,700 µg/L *
				Copper	10.5 µg/L
				Potassium	2,810 µg/L *
				Magnesium	35,700 µg/L *
				Sodium	94,700 µg/L *
				Zinc	166 µg/L
				Nitrite + Nitrate	3,090 µg/L *
				Phosphate	16.6 µg/L *
				Chloride	241,000 µg/L *
				Sulfate	95,300 µg/L *

**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSATE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	SS-01-008	0.0	7/12/92	Lead	5.58 µg/g
				Zinc	31.4 µg/g
Equipment Rinsate Blank	SS-01-008	0.0	7/12/92	Lead	3.4 µg/L
				Selenium	3.6 µg/L
				Barium	61.2 µg/L *
				Calcium	93,200 µg/L *
				Copper	28.3 µg/L
				Iron	134 µg/L
				Potassium	2,920 µg/L *
				Magnesium	35,500 µg/L *
				Sodium	93,400 µg/L *
				Zinc	64.8 µg/L
				Nitrite + Nitrate	3,030 µg/L *
				Phosphate	15.2 µg/L *
				Chloride	245,000 µg/L *
				Sulfate	98,100 µg/L *
Sample Preceding EB	SD-14-001	0.0	7/13/92	Selenium	16.7 µg/g
				Lead	226 µg/g
				Zinc	1070 µg/g
Equipment Rinsate Blank	SD-14-001	0.0	7/13/92	Lead	1.7 µg/L
				Selenium	3.5 µg/L
				Barium	59.7 µg/L *
				Calcium	93,500 µg/L *
				Potassium	3,190 µg/L *
				Magnesium	35,600 µg/L *
				Sodium	93,000 µg/L *
				Zinc	44.5 µg/L
				Nitrite + Nitrate	2,970 µg/L *
				Phosphate	13.2 µg/L *
				Chloride	245,000 µg/L *
				Sulfate	98,800 µg/L *

**APPENDIX C-16  
CONTAMINATED EQUIPMENT RINSATE  
BLANKS AND ASSOCIATED SAMPLES**

<b>Sample Type</b>	<b>Sample Identification</b>	<b>Depth (ft)</b>	<b>Date Sampled</b>	<b>Analyte</b>	<b>Concentration</b>
<b>Sample Preceding EB</b>	<b>SS-37-012</b>	<b>0.0</b>	<b>7/13/92</b>	<b>Selenium</b>	<b>34.6 µg/g</b>
				<b>Arsenic</b>	<b>3.62 µg/g</b>
				<b>Copper</b>	<b>14.9 µg/g</b>
				<b>Iron</b>	<b>7560 µg/g</b>
				<b>Lead</b>	<b>36.8 µg/g</b>
				<b>Zinc</b>	<b>509 µg/g</b>
<b>Equipment Rinsate Blank</b>	<b>SS-37-010</b>	<b>0.0</b>	<b>7/13/92</b>	<b>Lead</b>	<b>3.9 µg/L</b>
				<b>Selenium</b>	<b>3.9 µg/L</b>
				<b>Arsenic</b>	<b>2.99 µg/L</b>
				<b>Barium</b>	<b>61.0 µg/L *</b>
				<b>Calcium</b>	<b>94,600 µg/L *</b>
				<b>Copper</b>	<b>19.9 µg/L</b>
				<b>Iron</b>	<b>146 µg/L</b>
				<b>Potassium</b>	<b>3,140 µg/L *</b>
				<b>Magnesium</b>	<b>36,300 µg/L *</b>
				<b>Sodium</b>	<b>94,900 µg/L *</b>
				<b>Zinc</b>	<b>643 µg/L</b>
				<b>Chloroform</b>	<b>0.68 µg/L</b>
<b>Sample Preceding EB</b>	<b>SS-28-008</b>	<b>0.0</b>	<b>7/14/92</b>	<b>Lead</b>	<b>124 µg/g</b>
				<b>Zinc</b>	<b>127 µg/g</b>
<b>Equipment Rinsate Blank</b>	<b>SS-28-008</b>	<b>0.0</b>	<b>7/14/92</b>	<b>Lead</b>	<b>3.1 µg/L</b>
				<b>Selenium</b>	<b>3.7 µg/L</b>
				<b>Barium</b>	<b>61.7 µg/L *</b>
				<b>Calcium</b>	<b>95,100 µg/L *</b>
				<b>Potassium</b>	<b>3,170 µg/L *</b>
				<b>Magnesium</b>	<b>36,600 µg/L *</b>
				<b>Sodium</b>	<b>95,800 µg/L *</b>
				<b>Zinc</b>	<b>45.6 µg/L</b>
<b>Sample Preceding EB</b>	<b>SS-27-007</b>	<b>0.0</b>	<b>7/15/92</b>	<b>Selenium</b>	<b>35.9 µg/g</b>
				<b>Lead</b>	<b>162 µg/g</b>
<b>Equipment Rinsate Blank</b>	<b>SS-27-007</b>	<b>0.0</b>	<b>7/15/92</b>	<b>Zinc</b>	<b>98.0 µg/g</b>
				<b>Lead</b>	<b>1.6 µg/L</b>
				<b>Selenium</b>	<b>3.7 µg/L</b>
				<b>Barium</b>	<b>58.1 µg/L *</b>
				<b>Calcium</b>	<b>90,900 µg/L *</b>
				<b>Potassium</b>	<b>2,990 µg/L</b>
				<b>Magnesium</b>	<b>34,700 µg/L</b>
				<b>Sodium</b>	<b>91,100 µg/L</b>
				<b>Zinc</b>	<b>34.7 µg/L</b>

**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSATE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	SD-47-002	0.0	7/16/92	Iron	10500 µg/g
				Lead	201 µg/g
				Zinc	2100 µg/g
Equipment Rinsate Blank	SD-47-002	0.0	7/16/92	Lead	2.5 µg/L
				Selenium	3.4 µg/L
				Barium	61.3 µg/L *
				Calcium	94,300 µg/L *
				Iron	42.7 µg/L
				Potassium	2,910 µg/L *
				Magnesium	36,000 µg/L *
				Sodium	94,500 µg/L *
				Zinc	36.4 µg/L
Sample Preceding EB	SS-34-006	0.0	7/21/92	No Analytes Detected	
Equipment Rinsate Blank	SS-34-006	0.0	7/21/92	Lead	6.0 µg/L
				Selenium	4.0 µg/L
				Barium	57.1 µg/L *
				Calcium	96,900 µg/L *
				Iron	83.6 µg/L
				Potassium	3,630 µg/L *
				Magnesium	38,500 µg/L *
				Sodium	100,000 µg/L *
				Zinc	28.6 µg/L

**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSATE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	SB-01-001	30.0	7/23/92	Lead	5.44 µg/g
				Aluminum	5350 µg/g
				Copper	6.44 µg/g
				Iron	7760 µg/g
				Zinc	34.2 µg/g
Equipment Rinsate Blank	SB-01-001	30.0	7/23/92	Lead	4.7 µg/L
				Selenium	4.3 µg/L
				Arsenic	2.99 µg/L *
				Aluminum	279 µg/L
				Barium	55.1 µg/L *
				Calcium	93,300 µg/L *
				Copper	23.7 µg/L
				Iron	655 µg/L
				Potassium	3,350 µg/L *
				Magnesium	36,400 µg/L *
				Manganese	7.7 µg/L *
				Sodium	95,100 µg/L
				Zinc	310 µg/L
				Nitrite + Nitrate	3,220 µg/L *
				Phosphate	14.9 µg/L *
				Chloride	282,000 µg/L *
				Sulfate	113,000 µg/L *



**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSATE**  
**BLANKS AND ASSOCIATED SAMPLES**

<b>Sample Type</b>	<b>Sample Identification</b>	<b>Depth (ft)</b>	<b>Date Sampled</b>	<b>Analyte</b>	<b>Concentration</b>
<b>Sample Preceding EB</b>	<b>SB-01-005</b>	<b>10.0</b>	<b>7/25/92</b>	<b>Selenium</b>	<b>1.38 µg/g</b>
				<b>Aluminum</b>	<b>4090 µg/g</b>
				<b>Chromium</b>	<b>7.95 µg/g</b>
				<b>Copper</b>	<b>6.00 µg/g</b>
				<b>Iron</b>	<b>6500 µg/g</b>
				<b>Manganese</b>	<b>202 µg/g</b>
				<b>Zinc</b>	<b>24.0 µg/g</b>
<b>Equipment Rinsate Blank</b>	<b>SB-01-005</b>	<b>10.0</b>	<b>7/25/92</b>	<b>Lead</b>	<b>5.3 µg/L</b>
				<b>Selenium</b>	<b>3.6 µg/L</b>
				<b>Arsenic</b>	<b>2.88 µg/L *</b>
				<b>Aluminum</b>	<b>535 µg/L</b>
				<b>Barium</b>	<b>57.9 µg/L *</b>
				<b>Calcium</b>	<b>98,300 µg/L *</b>
				<b>Chromium</b>	<b>6.1 µg/L</b>
				<b>Copper</b>	<b>39.3 µg/L</b>
				<b>Iron</b>	<b>1,140 µg/L</b>
				<b>Potassium</b>	<b>3,710 µg/L *</b>
				<b>Magnesium</b>	<b>38,200 µg/L *</b>
				<b>Manganese</b>	<b>18.3 µg/L</b>
				<b>Sodium</b>	<b>101,000 µg/L *</b>
				<b>Zinc</b>	<b>297 µg/L</b>
				<b>Nitrite + Nitrate</b>	<b>3,330 µg/L *</b>
				<b>Phosphate</b>	<b>21.0 µg/L *</b>
				<b>Chloride</b>	<b>253,000 µg/L *</b>
				<b>Sulfate</b>	<b>114,000 µg/L *</b>

**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	SB-01-003	5.0	7/26/92	Selenium	88.5 µg/g
				Lead	14.0 µg/g
				Copper	13.0 µg/g
				Iron	10300 µg/g
				Zinc	49.3 µg/g
Equipment Rinse Blank	SB-01-003	5.0	7/26/92	Lead	6.7 µg/L
				Selenium	3.3 µg/L
				Barium	60.7 µg/L *
				Calcium	93,800 µg/L *
				Copper	30.3 µg/L
				Iron	407 µg/L
				Potassium	3,240 µg/L *
				Magnesium	35,700 µg/L *
				Manganese	5.7 µg/L *
				Sodium	93,500 µg/L *
				Zinc	168 µg/L
				Nitrite + Nitrate	3,070 µg/L
				Phosphate	17.6 µg/L
				Chloride	241,000 µg/L *
				Sulfate	101,000 µg/L *
Sample Preceding EB	SB-BK-005	3.0	7/27/92	Lead	10.7 µg/g
				Aluminum	4460 µg/g
				Copper	4.83 µg/g
				Iron	6770 µg/g
				Zinc	26.9 µg/g
Equipment Rinse Blank	SB-BK-005	3.0	7/27/92	Lead	6.7 µg/L
				Aluminum	212 µg/L
				Barium	60.9 µg/L *
				Calcium	97,000 µg/L *
				Copper	28.3 µg/L
				Iron	371 µg/L
				Potassium	3,740 µg/L *
				Magnesium	37,000 µg/L *
				Manganese	4.9 µg/L *
				Sodium	95,500 µg/L *
				Zinc	996 µg/L
				Nitrite + Nitrate	3,150 µg/L *
				Chloride	247,000 µg/L *
				Sulfate	106,000 µg/L *

**APPENDIX C-16**  
**CONTAMINATED EQUIPMENT RINSATE**  
**BLANKS AND ASSOCIATED SAMPLES**

Sample Type	Sample Identification	Depth (R)	Date Sampled	Analyte	Concentration
Sample Preceding EB	SB-01-008	15.0	7/28/92	Selenium	.430 µg/g
				Lead	4.86 µg/g
				Copper	4.80 µg/g
				Iron	4400 µg/g
				Vanadium	9.11 µg/g
				Zinc	13.9 µg/g
Equipment Rinsate Blank	SB-01-008	15.0	7/28/92	Selenium	3.4 µg/L
				Arsenic	2.88 µg/L *
				Barium	59.1 µg/L *
				Calcium	96,900 µg/L *
				Copper	24.0 µg/L
				Iron	237 µg/L
				Potassium	4,140 µg/L *
				Magnesium	36,600 µg/L *
				Manganese	5.6 µg/L *
				Sodium	93,700 µg/L *
				Vanadium	14.4 µg/L
				Zinc	532 µg/L
				Nitrite + Nitrate	3,110 µg/L *
				Phosphate	16.3 µg/L *
				Chloride	242,000 µg/L *
				Sulfate	103,000 µg/L *
Sample Preceding EB	SB-01-007	5.0	7/29/92	Lead	9.04 µg/g
Equipment Rinsate Blank	SB-01-007	5.0	7/29/92	Lead	µg/g
				Barium	1.7 µg/L
				Calcium	49.6 µg/L *
				Potassium	74,700 µg/L *
				Magnesium	4,410 µg/L *
				Sodium	36,600 µg/L *
				Nitrite + Nitrate	96,000 µg/L *
				Chloride	2,730 µg/L *
				Sulfate	248,000 µg/L *
					109,000 µg/L *

**APPENDIX C-16  
CONTAMINATED EQUIPMENT RINSE  
BLANKS AND ASSOCIATED SAMPLES**

<b>Sample Type</b>	<b>Sample Identification</b>	<b>Depth (ft)</b>	<b>Date Sampled</b>	<b>Analyte</b>	<b>Concentration</b>
<b>Sample</b>	<b>SB-01-006</b>	<b>5.0</b>	<b>7/30/92</b>	<b>Iron</b>	<b>4910 µg/g</b>
<b>Preceding EB</b>				<b>Sodium</b>	<b>244 µg/g</b>
				<b>Vanadium</b>	<b>7.92 µg/g</b>
<b>Equipment</b>	<b>SB-01-006</b>	<b>5.0</b>	<b>7/30/92</b>	<b>Barium</b>	<b>49.0 µg/L *</b>
<b>Rinse Blank</b>				<b>Calcium</b>	<b>74,800 µg/L *</b>
				<b>Iron</b>	<b>49.2 µg/L</b>
				<b>Potassium</b>	<b>4,540 µg/L *</b>
				<b>Magnesium</b>	<b>36,500 µg/L *</b>
				<b>Sodium</b>	<b>95,600 µg/L</b>
				<b>Vanadium</b>	<b>14.4 µg/L</b>
				<b>Nitrite + Nitrate</b>	<b>2,750 µg/L *</b>
				<b>Chloride</b>	<b>237,000 µg/L *</b>
				<b>Sulfate</b>	<b>109,000 µg/L *</b>
<b>Sample</b>	<b>EP-01-096</b>	<b>3.5</b>	<b>8/4/92</b>	<b>Arsenic</b>	<b>6.71 µg/g</b>
<b>Preceding EB</b>				<b>Copper</b>	<b>47.2 µg/g</b>
				<b>Vanadium</b>	<b>6.71 µg/g</b>
<b>Equipment</b>	<b>EP-01-096</b>	<b>3.5</b>	<b>8/4/92</b>	<b>Selenium</b>	<b>3.4 µg/L</b>
<b>Rinse Blank</b>				<b>Arsenic</b>	<b>3.2 µg/L</b>
				<b>Barium</b>	<b>47.5 µg/L *</b>
				<b>Calcium</b>	<b>64,000 µg/L *</b>
				<b>Copper</b>	<b>14.3 µg/L</b>
				<b>Potassium</b>	<b>4,410 µg/L *</b>
				<b>Magnesium</b>	<b>36,400 µg/L *</b>
				<b>Sodium</b>	<b>96,000 µg/L *</b>
				<b>Vanadium</b>	<b>12.9 µg/L</b>
				<b>Nitrite + Nitrate</b>	<b>2,630 µg/L *</b>
				<b>Chloride</b>	<b>254,000 µg/L *</b>
				<b>Sulfate</b>	<b>110,000 µg/L *</b>
				<b>Bis(2-ethylhexyl)phthalate</b>	<b>6.6 µg/L</b>

**APPENDIX C-16  
CONTAMINATED EQUIPMENT RINSE  
BLANKS AND ASSOCIATED SAMPLES**

<b>Sample Type</b>	<b>Sample Identification</b>	<b>Depth (ft)</b>	<b>Date Sampled</b>	<b>Analyte</b>	<b>Concentration</b>
<b>Sample Preceding EB</b>	<b>EP-01-099</b>	<b>7.0</b>	<b>8/5/92</b>	<b>Arsenic</b>	<b>8.57 µg/g</b>
				<b>Vanadium</b>	<b>7.37 µg/g</b>
				<b>Zinc</b>	<b>1740 µg/g</b>
<b>Equipment Rinse Blank</b>	<b>EP-01-099</b>	<b>7.0</b>	<b>8/5/92</b>	<b>Arsenic</b>	<b>2.99 µg/L</b>
				<b>Barium</b>	<b>47.9 µg/L *</b>
				<b>Calcium</b>	<b>64,600 µg/L *</b>
				<b>Potassium</b>	<b>4,400 µg/L *</b>
				<b>Magnesium</b>	<b>36,500 µg/L *</b>
				<b>Sodium</b>	<b>96,100 µg/L *</b>
				<b>Vanadium</b>	<b>14.5 µg/L</b>
				<b>Zinc</b>	<b>28.2 µg/L</b>
				<b>Nitrite + Nitrate</b>	<b>2,580 µg/L *</b>
				<b>Chloride</b>	<b>249,000 µg/L *</b>
				<b>Sulfate</b>	<b>109,000 µg/L *</b>
<b>Sample Preceding EB</b>	<b>EP-01-102</b>	<b>3.5</b>	<b>8/6/92</b>	<b>Vanadium</b>	<b>8.17 µg/g</b>
<b>Equipment Rinse Blank</b>	<b>EP-01-102</b>	<b>3.5</b>	<b>8/6/92</b>	<b>Barium</b>	<b>46.5 µg/L *</b>
				<b>Calcium</b>	<b>63,300 µg/L *</b>
				<b>Potassium</b>	<b>4,840 µg/L *</b>
				<b>Magnesium</b>	<b>36,100 µg/L *</b>
				<b>Sodium</b>	<b>95,100 µg/L *</b>
				<b>Vanadium</b>	<b>15.3 µg/L</b>
				<b>Nitrite + Nitrate</b>	<b>2,580 µg/L *</b>
				<b>Chloride</b>	<b>244,000 µg/L *</b>
				<b>Sulfate</b>	<b>109,000 µg/L *</b>
<b>Sample Preceding EB</b>	<b>EP-01-105</b>	<b>5.0</b>	<b>8/7/92</b>	<b>Arsenic</b>	<b>5.12 µg/g</b>
				<b>Vanadium</b>	<b>9.66 µg/g</b>
<b>Equipment Rinse Blank</b>	<b>EP-01-105</b>	<b>5.0</b>	<b>8/7/92</b>	<b>Arsenic</b>	<b>3.09 µg/L</b>
				<b>Barium</b>	<b>46.6 µg/L *</b>
				<b>Calcium</b>	<b>63,400 µg/L *</b>
				<b>Potassium</b>	<b>4,800 µg/L *</b>
				<b>Magnesium</b>	<b>36,500 µg/L *</b>
				<b>Sodium</b>	<b>96,100 µg/L *</b>
				<b>Vanadium</b>	<b>15.2 µg/L</b>
				<b>Nitrite + Nitrate</b>	<b>2,530 µg/L *</b>
				<b>Chloride</b>	<b>246,000 µg/L *</b>
				<b>Sulfate</b>	<b>110,000 µg/L *</b>

**APPENDIX C-16  
CONTAMINATED EQUIPMENT RINSE  
BLANKS AND ASSOCIATED SAMPLES**

<b>Sample Type</b>	<b>Sample Identification</b>	<b>Depth (ft)</b>	<b>Date Sampled</b>	<b>Analyte</b>	<b>Concentration</b>
<b>Sample Preceding EB</b>	<b>EP-01-111</b>	<b>3.5</b>	<b>8/8/92</b>	<b>Vanadium</b>	<b>14.1 µg/g</b>
<b>Equipment Rinse Blank</b>	<b>EP-01-111</b>	<b>3.5</b>	<b>8/8/92</b>	<b>Selenium</b>	<b>4.7 µg/L</b>
				<b>Arsenic</b>	<b>2.77 µg/L *</b>
				<b>Barium</b>	<b>48.2 µg/L *</b>
				<b>Calcium</b>	<b>65,100 µg/L *</b>
				<b>Potassium</b>	<b>4,490 µg/L *</b>
				<b>Magnesium</b>	<b>36,700 µg/L *</b>
				<b>Sodium</b>	<b>96,400 µg/L *</b>
				<b>Vanadium</b>	<b>11.7 µg/L</b>
				<b>Nitrite + Nitrate</b>	<b>2,700 µg/L *</b>
				<b>Chloride</b>	<b>239,000 µg/L *</b>
				<b>Sulfate</b>	<b>109,000 µg/L *</b>
<b>Sample Preceding EB</b>	<b>EP-01-112</b>	<b>3.5</b>	<b>8/9/92</b>	<b>No Analytes Detected</b>	
<b>Equipment Rinse Blank</b>	<b>EP-01-112</b>	<b>3.5</b>	<b>8/9/92</b>	<b>Selenium</b>	<b>3.9 µg/L</b>
				<b>Barium</b>	<b>47.8 µg/L *</b>
				<b>Calcium</b>	<b>64,100 µg/L *</b>
				<b>Potassium</b>	<b>4,540 µg/L *</b>
				<b>Magnesium</b>	<b>36,400 µg/L *</b>
				<b>Sodium</b>	<b>95,500 µg/L *</b>
				<b>Nitrite + Nitrate</b>	<b>2,690 µg/L *</b>
				<b>Chloride</b>	<b>240,000 µg/L *</b>
				<b>Sulfate</b>	<b>108,000 µg/L *</b>
<b>Sample Preceding EB</b>	<b>EP-01-115</b>	<b>4.5</b>	<b>8/10/92</b>	<b>Arsenic</b>	<b>12.0 µg/g</b>
				<b>Manganese</b>	<b>2400 µg/g</b>
<b>Equipment Rinse Blank</b>	<b>EP-01-115</b>	<b>4.5</b>	<b>8/10/92</b>	<b>Lead</b>	<b>1.4 µg/L *</b>
				<b>Arsenic</b>	<b>3.09 µg/L</b>
				<b>Barium</b>	<b>57.2 µg/L *</b>
				<b>Calcium</b>	<b>90,800 µg/L *</b>
				<b>Potassium</b>	<b>4,510 µg/L *</b>
				<b>Magnesium</b>	<b>38,600 µg/L *</b>
				<b>Manganese</b>	<b>3.0 µg/L</b>
				<b>Sodium</b>	<b>96,600 µg/L *</b>
				<b>Vanadium</b>	<b>13.0 µg/L</b>
				<b>Nitrite + Nitrate</b>	<b>2,730 µg/L *</b>
				<b>Chloride</b>	<b>239,000 µg/L *</b>
				<b>Sulfate</b>	<b>116,000 µg/L *</b>

**APPENDIX C-16  
CONTAMINATED EQUIPMENT RINSATE  
BLANKS AND ASSOCIATED SAMPLES**

<b>Sample Type</b>	<b>Sample Identification</b>	<b>Depth (ft)</b>	<b>Date Sampled</b>	<b>Analyte</b>	<b>Concentration</b>
Sample Preceding EB	EP-01-121	9.0	8/11/92	Vanadium	7.19 µg/g
Equipment Rinsate Blank	EP-01-121	9.0	8/11/92	Barium	55.8 µg/L *
				Calcium	85,600 µg/L *
				Potassium	4,270 µg/L *
				Magnesium	38,100 µg/L *
				Sodium	95,900 µg/L *
				Vanadium	11.5 µg/L
				Nitrite + Nitrate	2,710 µg/L *
				Chloride	259,000 µg/L *
				Sulfate	116,000 µg/L *

\* These concentrations are equivalent to those found naturally in the source water, and are not attributed to equipment contamination.

EB - Equipment Rinsate Blank

**APPENDIX C-17  
POSITIVE FILTER BLANK RESULTS**

Field ID	FB-45-001	FB-14-001	FB-14-002	FB-47-001	
Lab ID	TNWTR1*24	TNWTR1*18	TNWTR1*19	TNWTR*20	
Collection Date	7/9/92	7/12/92	7/13/92	7/16/92	
Parameter	Units				
Inorganics					
Selenium	µg/L	3.6	4.0	5.0	3.5
Barium	µg/L	60.8 *	62.4 *	60.9 *	64.8 *
Calcium	µg/L	94200 *	92800 *	95500 *	96200 *
Copper	µg/L	<8.09	13.0	<8.09	<8.09
Potassium	µg/L	2540 *	2280 *	2790 *	2830 *
Magnesium	µg/L	36400 *	35900 *	36500 *	36600 *
Sodium	µg/L	95300 *	94500 *	95300 *	95100 *
Zinc	µg/L	46.6	109.0	<21.1	<21.1
Lead	µg/L	<1.3	3.8	2.8	<1.3

\* These concentrations are equivalent to those found in the source water and are therefore not attributed to the filtering process.



# APPENDIX C-18

Page: 1

## Tooele-North Phase I RFI Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	AAD	SD22	08/08/92	S	Arsenic	82.00			5.000	4.100	UGL
		SD22	08/08/92	S	Arsenic	104.00			75.000	78.000	UGL
		SD22	08/08/92	S	Arsenic	105.60			75.000	79.200	UGL
ES	AAN	SD22	09/07/92	S	Arsenic	112.00			5.000	5.600	UGL
		SD22	09/07/92	S	Arsenic	93.33			75.000	70.000	UGL
		SD22	09/07/92	S	Arsenic	96.67			75.000	72.500	UGL
ES	AAI	SD22	08/13/92	S	Arsenic	100.00			5.000	5.000	UGL
		SD22	08/13/92	S	Arsenic	92.80			75.000	69.600	UGL
		SD22	08/13/92	S	Arsenic	94.27			75.000	70.700	UGL
ES	ABD	LN10	08/15/92	S	alpha-Endosulfan / Endosulfan I	70.00			0.020	0.014	UGG
		LN10	08/15/92	S	Aldrin	95.00			0.020	0.019	UGG
		LN10	08/15/92	S	beta-Endosulfan / Endosulfan II	35.00			0.020	0.007	UGG
		LN10	08/15/92	S	Dieldrin	60.00			0.020	0.012	UGG
		LN10	08/15/92	S	Endrin	20.00			0.020	0.004	UGG
		LN10	08/15/92	S	Heptachlor	65.00			0.020	0.013	UGG
		LN10	08/15/92	S	Isodrin	83.33			0.030	0.025	UGG
		LN10	08/15/92	S	Lindane / gamma-Benzenehexachloride	80.00			0.020	0.016	UGG
		LN10	08/15/92	S	Methoxychlor	23.50			0.200	0.047	UGG
		LN10	08/15/92	S	p,p-DDT	95.00			0.020	0.019	UGG
ES	ACC	JD19	08/07/92	S	Arsenic	135.94			0.473	0.643	UGG
		JD19	08/07/92	S	Arsenic	111.33			7.590	8.450	UGG
		JD19	08/07/92	S	Arsenic	104.71			7.640	8.000	UGG
ES	ACB	JD19	09/17/92	S	Arsenic	119.83			0.464	0.556	UGG
		JD19	09/17/92	S	Arsenic	113.54			7.680	8.720	UGG
		JD19	09/17/92	S	Arsenic	113.14			7.760	8.780	UGG
ES	ACI	JD19	09/17/92	S	Arsenic	117.89			0.492	0.580	UGG
		JD19	09/17/92	S	Arsenic	107.21			7.630	8.180	UGG
		JD19	09/17/92	S	Arsenic	106.53			7.960	8.480	UGG
ES	ACH	JD19	09/28/92	S	Arsenic	126.03			0.484	0.610	UGG
		JD19	09/28/92	S	Arsenic	104.21			7.830	8.160	UGG
		JD19	09/28/92	S	Arsenic	99.37			7.980	7.930	UGG
ES	ACP	JD19	09/29/92	S	Arsenic	138.01			0.492	0.679	UGG
		JD19	09/29/92	S	Arsenic	109.16			7.750	8.440	UGG
		JD19	09/29/92	S	Arsenic	108.88			7.880	8.580	UGG
ES	AEA	LN18	08/07/92	S	2,4,6-Tribromophenol	88.86			6.780	5.900	UGG
		LN18	08/07/92	S	2-Fluorebiphenyl	93.94			3.300	3.100	UGG
		LN18	08/07/92	S	2-Fluorephenol	83.58			6.780	5.600	UGG
		LN18	08/07/92	S	Nitrobenzene-05	98.91			3.380	3.000	UGG
		LN18	08/07/92	S	Phenol-06	83.58			6.780	5.600	UGG
		LN18	08/07/92	S	Terphenyl-014	98.91			3.380	3.000	UGG
ES	AES	LN18	08/08/92	S	2,4,6-Tribromophenol	104.48			6.780	7.000	UGG
		LN18	08/08/92	S	2-Fluorebiphenyl	84.85			3.380	2.800	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CDB, 2 = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tesoro-North Phase I SFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	AEB	LM18	08/06/92	S	2-Fluorophenol	82.09			6.700	5.500	UGG
		LM18	08/06/92	S	Nitrobenzene-D5	87.88			3.300	2.900	UGG
		LM18	08/06/92	S	Phenol-D6	77.61			6.700	5.200	UGG
		LM18	08/06/92	S	Terphenyl-D14	93.94			3.300	3.100	UGG
ES	AEE	LM18	08/12/92	S	2,4,6-Tribromophenol	80.60			6.700	5.400	UGG
		LM18	08/12/92	S	2-Fluorobiphenyl	87.88			3.300	2.900	UGG
		LM18	08/12/92	S	2-Fluorophenol	92.34			6.700	6.200	UGG
		LM18	08/12/92	S	Nitrobenzene-D5	90.91			3.300	3.000	UGG
		LM18	08/12/92	S	Phenol-D6	91.04			6.700	6.100	UGG
		LM18	08/12/92	S	Terphenyl-D14	90.91			3.300	3.000	UGG
ES	AEG	LM18	08/20/92	S	2,4,6-Tribromophenol	92.34			6.700	6.200	UGG
		LM18	08/20/92	S	2-Fluorobiphenyl	87.88			3.300	2.900	UGG
		LM18	08/20/92	S	2-Fluorophenol	83.58			6.700	5.600	UGG
		LM18	08/20/92	S	Nitrobenzene-D5	81.82			3.300	2.700	UGG
		LM18	08/20/92	S	Phenol-D6	88.06			6.700	5.900	UGG
		LM18	08/20/92	S	Terphenyl-D14	87.88			3.300	2.900	UGG
ES	AEX	LM18	08/26/92	S	2,4,6-Tribromophenol	79.10			6.700	5.300	UGG
		LM18	08/26/92	S	2-Fluorobiphenyl	96.97			3.300	3.200	UGG
		LM18	08/26/92	S	2-Fluorophenol	100.00			6.700	6.700	UGG
		LM18	08/26/92	S	Nitrobenzene-D5	96.97			3.300	3.200	UGG
		LM18	08/26/92	S	Phenol-D6	92.34			6.700	6.200	UGG
		LM18	08/26/92	S	Terphenyl-D14	84.85			3.300	2.800	UGG
ES	AFA	UM52	08/17/92	S	1,3,5-Trinitrobenzene	88.73			0.958	0.850	UGL
		UM52	08/17/92	S	1,3,5-Trinitrobenzene	80.58			9.580	7.720	UGL
		UM52	08/17/92	S	1,3,5-Trinitrobenzene	86.12			9.580	8.250	UGL
		UM52	08/17/92	S	1,3,5-Trinitrobenzene	83.00			44.700	37.100	UGL
		UM52	08/17/92	S	2,4,6-Trinitrotoluene	95.04			1.210	1.150	UGL
		UM52	08/17/92	S	2,4,6-Trinitrotoluene	89.26			12.100	10.800	UGL
		UM52	08/17/92	S	2,4,6-Trinitrotoluene	89.26			12.100	10.800	UGL
		UM52	08/17/92	S	2,4,6-Trinitrotoluene	82.38			80.600	66.400	UGL
		UM52	08/17/92	S	2,4-Dinitrotoluene	95.93			0.123	0.118	UGL
		UM52	08/17/92	S	2,4-Dinitrotoluene	83.74			1.230	1.030	UGL
		UM52	08/17/92	S	2,4-Dinitrotoluene	85.37			1.230	1.050	UGL
		UM52	08/17/92	S	2,4-Dinitrotoluene	92.87			16.400	15.180	UGL
		UM52	08/17/92	S	2-Nitrotoluene (TIC)	101.34			0.674	0.683	UGL
		UM52	08/17/92	S	2-Nitrotoluene (TIC)	77.60			6.740	5.230	UGL
		UM52	08/17/92	S	2-Nitrotoluene (TIC)	83.98			6.740	5.660	UGL
		UM52	08/17/92	S	2-Nitrotoluene (TIC)	86.04			101.000	86.900	UGL
		UM52	08/17/92	S	Nitrobenzene	95.83			1.200	1.150	UGL
		UM52	08/17/92	S	Nitrobenzene	78.80			12.000	9.360	UGL
		UM52	08/17/92	S	Nitrobenzene	84.17			12.000	10.100	UGL
		UM52	08/17/92	S	Nitrobenzene	85.23			96.300	82.100	UGL
		UM52	08/17/92	S	Cyclonite (RBK)	126.23			2.440	3.080	UGL
		UM52	08/17/92	S	Cyclonite (RBK)	97.13			24.400	23.700	UGL
		UM52	08/17/92	S	Cyclonite (RBK)	107.38			24.400	26.200	UGL
		UM52	08/17/92	S	Cyclonite (RBK)	91.68			91.480	83.800	UGL
ES	APB	UM52	08/18/92	S	1,3,5-Trinitrobenzene	78.88			0.958	0.748	UGL
		UM52	08/18/92	S	1,3,5-Trinitrobenzene	77.77			9.980	7.480	UGL

Notes for Data Flags: 1 = Results less than ERL but greater than CDB, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tosco-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Conc.	Recovered Conc.	Units
ES	AFB	UAS2	08/18/92	S	1,3,5-Trinitrobenzene	95.62			9.580	9.160	UGL
		UAS2	08/18/92	S	1,3,5-Trinitrobenzene	87.02			44.700	38.900	UGL
		UAS2	08/18/92	S	2,4,6-Trinitrotoluene	93.39			1.210	1.130	UGL
		UAS2	08/18/92	S	2,4,6-Trinitrotoluene	86.78			12.100	10.500	UGL
		UAS2	08/18/92	S	2,4,6-Trinitrotoluene	98.35			12.100	11.900	UGL
		UAS2	08/18/92	S	2,4,6-Trinitrotoluene	84.62			80.600	68.200	UGL
		UAS2	08/18/92	S	2,4-Dinitrotoluene	90.24			0.123	0.111	UGL
		UAS2	08/18/92	S	2,4-Dinitrotoluene	86.99			1.230	1.070	UGL
		UAS2	08/18/92	S	2,4-Dinitrotoluene	93.50			1.230	1.150	UGL
		UAS2	08/18/92	S	2,4-Dinitrotoluene	90.85			16.400	14.900	UGL
		UAS2	08/18/92	S	2-Nitrotoluene (TIC)	34.27			0.674	0.231	UGL
		UAS2	08/18/92	S	2-Nitrotoluene (TIC)	40.36			6.740	2.720	UGL
		UAS2	08/18/92	S	2-Nitrotoluene (TIC)	87.39			6.740	5.890	UGL
		UAS2	08/18/92	S	2-Nitrotoluene (TIC)	33.37			101.000	33.700	UGL
		UAS2	08/18/92	S	Nitrobenzene	34.92			1.200	0.419	UGL
		UAS2	08/18/92	S	Nitrobenzene	40.00			12.000	4.800	UGL
		UAS2	08/18/92	S	Nitrobenzene	81.00			12.000	9.720	UGL
		UAS2	08/18/92	S	Nitrobenzene	36.14			96.300	34.800	UGL
		UAS2	08/18/92	S	Cyclonite (RDX)	85.66			2.440	2.090	UGL
		UAS2	08/18/92	S	Cyclonite (RDX)	88.11			24.400	21.500	UGL
		UAS2	08/18/92	S	Cyclonite (RDX)	111.48			24.400	27.200	UGL
		UAS2	08/18/92	S	Cyclonite (RDX)	94.75			91.400	86.600	UGL
Es	AFC	UAS2	08/08/92	S	1,3,5-Trinitrobenzene	86.22			0.958	0.826	UGL
		UAS2	08/08/92	S	1,3,5-Trinitrobenzene	87.68			9.580	8.480	UGL
		UAS2	08/08/92	S	1,3,5-Trinitrobenzene	92.69			9.580	8.880	UGL
		UAS2	08/08/92	S	1,3,5-Trinitrobenzene	93.29			44.700	41.700	UGL
		UAS2	08/08/92	S	2,4,6-Trinitrotoluene	100.00			1.210	1.210	UGL
		UAS2	08/08/92	S	2,4,6-Trinitrotoluene	91.74			12.100	11.100	UGL
		UAS2	08/08/92	S	2,4,6-Trinitrotoluene	96.69			12.100	11.700	UGL
		UAS2	08/08/92	S	2,4,6-Trinitrotoluene	86.72			80.600	69.900	UGL
		UAS2	08/08/92	S	2,4-Dinitrotoluene	95.12			0.123	0.117	UGL
		UAS2	08/08/92	S	2,4-Dinitrotoluene	95.12			1.230	1.170	UGL
		UAS2	08/08/92	S	2,4-Dinitrotoluene	99.19			1.230	1.220	UGL
		UAS2	08/08/92	S	2,4-Dinitrotoluene	100.61			16.400	16.500	UGL
		UAS2	08/08/92	S	2-Nitrotoluene (TIC)	68.55			0.674	0.442	UGL
		UAS2	08/08/92	S	2-Nitrotoluene (TIC)	86.35			6.740	5.820	UGL
		UAS2	08/08/92	S	2-Nitrotoluene (TIC)	91.99			6.740	6.200	UGL
		UAS2	08/08/92	S	2-Nitrotoluene (TIC)	86.83			101.000	87.700	UGL
		UAS2	08/08/92	S	Nitrobenzene	85.83			1.200	1.030	UGL
		UAS2	08/08/92	S	Nitrobenzene	88.33			12.000	10.400	UGL
		UAS2	08/08/92	S	Nitrobenzene	93.33			12.000	11.200	UGL
		UAS2	08/08/92	S	Nitrobenzene	89.10			96.300	85.800	UGL
		UAS2	08/08/92	S	Cyclonite (RDX)	105.33			2.440	2.570	UGL
		UAS2	08/08/92	S	Cyclonite (RDX)	100.00			24.400	24.400	UGL
		UAS2	08/08/92	S	Cyclonite (RDX)	106.97			24.400	26.100	UGL
		UAS2	08/08/92	S	Cyclonite (RDX)	101.09			91.400	92.400	UGL
ES	APD	UAS2	08/10/92	S	1,3,5-Trinitrobenzene	83.40			0.958	0.799	UGL
		UAS2	08/10/92	S	1,3,5-Trinitrobenzene	90.71			9.580	8.690	UGL
		UAS2	08/10/92	S	1,3,5-Trinitrobenzene	96.66			9.580	9.260	UGL
		UAS2	08/10/92	S	1,3,5-Trinitrobenzene	91.85			44.700	40.700	UGL
		UAS2	08/10/92	S	2,4,6-Trinitrotoluene	92.56			1.210	1.120	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tosco-North Phase 1 RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Conc.	Recovered Conc.	Units
ES	APD	UAS2	08/10/92	S	2,4,6-Trinitrotoluene	90.91			12.100	11.000	UGL
		UAS2	08/10/92	S	2,4,6-Trinitrotoluene	91.74			12.100	11.100	UGL
		UAS2	08/10/92	S	2,4,6-Trinitrotoluene	83.37			80.600	67.200	UGL
		UAS2	08/10/92	S	2,4-Dinitrotoluene	101.36			0.295	0.299	UGL
		UAS2	08/10/92	S	2,4-Dinitrotoluene	103.73			0.295	0.306	UGL
		UAS2	08/10/92	S	2,4-Dinitrotoluene	92.28			2.440	2.270	UGL
		UAS2	08/10/92	S	2,4-Dinitrotoluene	98.17			16.400	16.100	UGL
		UAS2	08/10/92	S	2-Nitrotoluene (TIC)	106.68			0.674	0.719	UGL
		UAS2	08/10/92	S	2-Nitrotoluene (TIC)	85.01			6.740	5.730	UGL
		UAS2	08/10/92	S	2-Nitrotoluene (TIC)	103.56			6.740	6.980	UGL
		UAS2	08/10/92	S	2-Nitrotoluene (TIC)	86.93			101.000	87.800	UGL
		UAS2	08/10/92	S	Nitrobenzene	81.17			1.200	0.974	UGL
		UAS2	08/10/92	S	Nitrobenzene	83.25			12.000	9.990	UGL
		UAS2	08/10/92	S	Nitrobenzene	84.17			12.000	10.100	UGL
		UAS2	08/10/92	S	Nitrobenzene	86.19			96.300	83.000	UGL
		UAS2	08/10/92	S	Cyclonite (RDX)	102.46			2.440	2.500	UGL
		UAS2	08/10/92	S	Cyclonite (RDX)	91.39			24.400	22.330	UGL
		UAS2	08/10/92	S	Cyclonite (RDX)	98.77			24.400	24.100	UGL
		UAS2	08/10/92	S	Cyclonite (RDX)	97.99			91.400	89.200	UGL
ES	APE	UAS2	08/26/92	S	1,3,5-Trinitrobenzene	77.24			0.958	0.740	UGL
		UAS2	08/26/92	S	1,3,5-Trinitrobenzene	91.75			9.580	8.790	UGL
		UAS2	08/26/92	S	1,3,5-Trinitrobenzene	91.75			9.580	8.790	UGL
		UAS2	08/26/92	S	1,3,5-Trinitrobenzene	87.70			44.700	39.200	UGL
		UAS2	08/26/92	S	2,4,6-Trinitrotoluene	90.08			1.210	1.090	UGL
		UAS2	08/26/92	S	2,4,6-Trinitrotoluene	90.91			12.100	11.000	UGL
		UAS2	08/26/92	S	2,4,6-Trinitrotoluene	90.91			12.100	11.000	UGL
		UAS2	08/26/92	S	2,4,6-Trinitrotoluene	80.65			80.600	65.000	UGL
		UAS2	08/26/92	S	2,4-Dinitrotoluene	87.80			0.123	0.108	UGL
		UAS2	08/26/92	S	2,4-Dinitrotoluene	87.80			1.230	1.080	UGL
		UAS2	08/26/92	S	2,4-Dinitrotoluene	88.62			1.230	1.090	UGL
		UAS2	08/26/92	S	2,4-Dinitrotoluene	90.85			16.400	14.900	UGL
		UAS2	08/26/92	S	2-Nitrotoluene (TIC)	85.76			0.674	0.578	UGL
		UAS2	08/26/92	S	2-Nitrotoluene (TIC)	92.14			6.740	6.210	UGL
		UAS2	08/26/92	S	2-Nitrotoluene (TIC)	93.70			6.740	6.490	UGL
		UAS2	08/26/92	S	2-Nitrotoluene (TIC)	82.08			101.000	82.900	UGL
		UAS2	08/26/92	S	Nitrobenzene	89.17			1.200	1.078	UGL
		UAS2	08/26/92	S	Nitrobenzene	83.33			12.000	10.000	UGL
		UAS2	08/26/92	S	Nitrobenzene	83.33			12.000	10.000	UGL
		UAS2	08/26/92	S	Nitrobenzene	83.39			96.300	80.300	UGL
ES	APN	UAS2	09/01/92	S	1,3,5-Trinitrobenzene	71.40			0.958	0.684	UGL
		UAS2	09/01/92	S	1,3,5-Trinitrobenzene	84.76			9.580	8.128	UGL
		UAS2	09/01/92	S	1,3,5-Trinitrobenzene	86.93			9.580	8.330	UGL
		UAS2	09/01/92	S	1,3,5-Trinitrobenzene	87.25			44.700	39.000	UGL
		UAS2	09/01/92	S	2,4,6-Trinitrotoluene	89.26			1.210	1.008	UGL
		UAS2	09/01/92	S	2,4,6-Trinitrotoluene	89.26			12.100	10.000	UGL
		UAS2	09/01/92	S	2,4,6-Trinitrotoluene	90.08			12.100	10.900	UGL
		UAS2	09/01/92	S	2,4,6-Trinitrotoluene	83.87			80.600	67.400	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than COB, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tosco-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	AFH	UMS2	09/01/92	S	2,4-Dinitrotoluene	81.30			0.123	0.109	UGL
		UMS2	09/01/92	S	2,4-Dinitrotoluene	80.16			1.230	0.986	UGL
		UMS2	09/01/92	S	2,4-Dinitrotoluene	82.93			1.230	1.020	UGL
		UMS2	09/01/92	S	2,4-Dinitrotoluene	89.63			16.400	14.700	UGL
		UMS2	09/01/92	S	2-Nitrotoluene (TIC)	100.99			0.674	0.678	UGL
		UMS2	09/01/92	S	2-Nitrotoluene (TIC)	86.94			6.740	5.860	UGL
		UMS2	09/01/92	S	2-Nitrotoluene (TIC)	88.13			6.740	5.940	UGL
		UMS2	09/01/92	S	2-Nitrotoluene (TIC)	88.51			101.000	89.400	UGL
		UMS2	09/01/92	S	Nitrobenzene	81.17			1.200	0.974	UGL
		UMS2	09/01/92	S	Nitrobenzene	82.75			12.000	9.930	UGL
		UMS2	09/01/92	S	Nitrobenzene	84.17			12.000	10.100	UGL
		UMS2	09/01/92	S	Nitrobenzene	89.20			96.300	85.900	UGL
		UMS2	09/01/92	S	Cyclonite (RDX)	80.74			2.440	1.970	UGL
		UMS2	09/01/92	S	Cyclonite (RDX)	86.89			24.400	21.200	UGL
		UMS2	09/01/92	S	Cyclonite (RDX)	90.16			24.400	22.000	UGL
		UMS2	09/01/92	S	Cyclonite (RDX)	94.86			91.400	86.700	UGL
ES	ANA	KT05	07/24/92	S	Chloride	100.80			12.500	12.600	UGG
		KT05	07/24/92	S	Chloride	101.44			90.000	91.300	UGG
		KT05	07/24/92	S	Chloride	101.44			90.000	91.300	UGG
		KT05	07/24/92	S	Sulfate	98.40			125.000	123.000	UGG
		KT05	07/24/92	S	Sulfate	101.00			400.000	404.000	UGG
		KT05	07/24/92	S	Sulfate	101.25			400.000	405.000	UGG
ES	AMB	KT05	07/30/92	S	Chloride	105.60			12.500	13.200	UGG
		KT05	07/30/92	S	Chloride	105.56			90.000	95.000	UGG
		KT05	07/30/92	S	Chloride	105.67			90.000	95.100	UGG
		KT05	07/30/92	S	Fluoride	104.32			6.250	6.520	UGG
		KT05	07/30/92	S	Fluoride	100.80			50.000	50.400	UGG
		KT05	07/30/92	S	Fluoride	101.20			50.000	50.600	UGG
		KT05	07/30/92	S	Sulfate	97.60			125.000	122.000	UGG
		KT05	07/30/92	S	Sulfate	101.00			400.000	404.000	UGG
		KT05	07/30/92	S	Sulfate	101.75			400.000	407.000	UGG
ES	ANC	KT05	08/05/92	S	Chloride	100.80			12.500	12.600	UGG
		KT05	08/05/92	S	Chloride	105.89			90.000	95.300	UGG
		KT05	08/05/92	S	Chloride	106.22			90.000	95.600	UGG
		KT05	08/05/92	S	Sulfate	97.60			125.000	122.000	UGG
		KT05	08/05/92	S	Sulfate	103.25			400.000	413.000	UGG
		KT05	08/05/92	S	Sulfate	103.50			400.000	414.000	UGG
ES	AND	KT05	08/10/92	S	Chloride	96.80			12.500	12.100	UGG
		KT05	08/10/92	S	Chloride	104.33			90.000	95.900	UGG
		KT05	08/10/92	S	Chloride	104.78			90.000	94.300	UGG
		KT05	08/10/92	S	Sulfate	98.40			125.000	123.000	UGG
		KT05	08/10/92	S	Sulfate	101.50			400.000	406.000	UGG
		KT05	08/10/92	S	Sulfate	102.00			400.000	408.000	UGG
ES	ANE	99	08/18/92	S	Chloride	96.00			12.500	12.000	UGG
		99	08/18/92	S	Chloride	104.44			90.000	94.000	UGG
		99	08/18/92	S	Chloride	105.56			90.000	95.000	UGG
		99	08/18/92	S	Sulfate	121.40			12.500	13.200	UGG
		99	08/18/92	S	Sulfate	103.25			400.000	413.000	UGG

Note: For Data Flags: 1 = Results less than CRL but greater than COD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Toxic-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Conc.	Recovered Conc.	Units
ES	AME	99	08/18/92	S	Sulfate	104.90			400.000	418.000	UGG
ES	AMF	99	08/24/92	S	Chloride	95.20			12.500	11.900	UGG
		99	08/24/92	S	Chloride	104.22			90.000	95.000	UGG
		99	08/24/92	S	Chloride	104.78			90.000	94.300	UGG
		99	08/24/92	S	Sulfate	118.40			12.500	14.800	UGG
		99	08/24/92	S	Sulfate	103.25			400.000	413.000	UGG
		99	08/24/92	S	Sulfate	104.00			400.000	416.000	UGG
ES	ANG	99	08/27/92	S	Chloride	91.20			12.500	11.400	UGG
		99	08/27/92	S	Chloride	103.44			90.000	95.100	UGG
		99	08/27/92	S	Chloride	103.44			90.000	95.100	UGG
		99	08/27/92	S	Sulfate	76.96			12.500	9.620	UGG
		99	08/27/92	S	Sulfate	101.50			400.000	406.000	UGG
		99	08/27/92	S	Sulfate	101.50			400.000	406.000	UGG
ES	ANH	KT05	09/02/92	S	Chloride	96.80			12.500	12.100	UGG
		KT05	09/02/92	S	Chloride	102.78			90.000	92.500	UGG
		KT05	09/02/92	S	Chloride	103.44			90.000	95.100	UGG
		KT05	09/02/92	S	Sulfate	97.60			125.000	122.000	UGG
		KT05	09/02/92	S	Sulfate	101.50			400.000	406.000	UGG
		KT05	09/02/92	S	Sulfate	102.25			400.000	409.000	UGG
ES	ANI	KT05	09/04/92	S	Chloride	96.80			12.500	12.000	UGG
		KT05	09/04/92	S	Chloride	102.11			90.000	91.900	UGG
		KT05	09/04/92	S	Chloride	102.67			90.000	92.400	UGG
		KT05	09/04/92	S	Sulfate	96.80			125.000	121.000	UGG
		KT05	09/04/92	S	Sulfate	102.25			400.000	409.000	UGG
		KT05	09/04/92	S	Sulfate	102.25			400.000	409.000	UGG
ES	AJA	LN19	07/31/92	S	1,2-Dichloroethane-04	94.00			0.050	0.047	UGG
		LN19	07/31/92	S	4-Bromofluorobenzene	102.00			0.050	0.051	UGG
		LN19	07/31/92	S	Toluene-08	102.00			0.050	0.051	UGG
ES	AJB	LN19	08/05/92	S	1,2-Dichloroethane-04	96.00			0.050	0.048	UGG
		LN19	08/05/92	S	4-Bromofluorobenzene	102.00			0.050	0.051	UGG
		LN19	08/05/92	S	Toluene-08	102.00			0.050	0.051	UGG
ES	AJC	LN19	08/09/92	S	1,2-Dichloroethane-04	96.00			0.050	0.048	UGG
		LN19	08/09/92	S	4-Bromofluorobenzene	102.00			0.050	0.051	UGG
		LN19	08/09/92	S	Toluene-08	100.00			0.050	0.050	UGG
ES	AJD	LN19	08/16/92	S	1,2-Dichloroethane-04	98.00			0.050	0.044	UGG
		LN19	08/16/92	S	4-Bromofluorobenzene	92.00			0.050	0.046	UGG
		LN19	08/16/92	S	Toluene-08	96.00			0.050	0.048	UGG
ES	AJF	LN19	08/18/92	S	1,2-Dichloroethane-04	96.00			0.050	0.048	UGG
		LN19	08/18/92	S	4-Bromofluorobenzene	98.00			0.050	0.049	UGG
		LN19	08/18/92	S	Toluene-08	98.00			0.050	0.049	UGG
ES	AJG	LN19	08/17/92	S	1,2-Dichloroethane-04	96.00			0.050	0.048	UGG
		LN19	08/17/92	S	4-Bromofluorobenzene	98.00			0.050	0.046	UGG
		LN19	08/17/92	S	Toluene-08	100.00			0.050	0.050	UGG

Notes for Data Flags: 1 = Results less than GLL but greater than GDB, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	AJI	LM19	08/20/92	S	1,2-Dichloroethane-D4	94.00			0.050	0.047	UGG
		LM19	08/20/92	S	4-Bromofluorobenzene	94.00			0.050	0.047	UGG
		LM19	08/20/92	S	Toluene-D8	94.00			0.050	0.047	UGG
ES	AJJ	LM19	08/21/92	S	1,2-Dichloroethane-D4	96.00			0.050	0.048	UGG
		LM19	08/21/92	S	4-Bromofluorobenzene	98.00			0.050	0.049	UGG
		LM19	08/21/92	S	Toluene-D8	98.00			0.050	0.049	UGG
ES	AKA	TT10	08/04/92	S	Chloride	100.50			8000.000	8040.000	UGL
		TT10	08/04/92	S	Chloride	100.00			25000.000	25000.000	UGL
		TT10	08/04/92	S	Chloride	100.00			25000.000	25000.000	UGL
		TT10	08/04/92	S	Sulfate	88.50			20000.000	17700.000	UGL
		TT10	08/04/92	S	Sulfate	99.60			250000.000	249000.000	UGL
		TT10	08/04/92	S	Sulfate	100.40			250000.000	251000.000	UGL
ES	AKB	99	08/13/92	S	Bromide	101.00			20000.000	20200.000	UGL
		99	08/13/92	S	Bromide	101.00			20000.000	20200.000	UGL
ES	AKC	TT10	08/17/92	S	Chloride	94.00			4000.000	3760.000	UGL
		TT10	08/17/92	S	Chloride	99.60			25000.000	24900.000	UGL
		TT10	08/17/92	S	Chloride	100.00			25000.000	25000.000	UGL
		TT10	08/17/92	S	Sulfate	87.50			20000.000	17500.000	UGL
		TT10	08/17/92	S	Sulfate	99.60			250000.000	249000.000	UGL
		TT10	08/17/92	S	Sulfate	99.60			250000.000	249000.000	UGL
ES	AKD	TT10	08/25/92	S	Chloride	91.00			4000.000	3640.000	UGL
		TT10	08/25/92	S	Chloride	100.00			25000.000	25000.000	UGL
		TT10	08/25/92	S	Chloride	100.80			25000.000	25200.000	UGL
		TT10	08/25/92	S	Sulfate	88.00			20000.000	17600.000	UGL
		TT10	08/25/92	S	Sulfate	101.20			250000.000	253000.000	UGL
		TT10	08/25/92	S	Sulfate	102.00			250000.000	255000.000	UGL
ES	AKE	TT10	08/25/92	S	Chloride	93.50			4000.000	3740.000	UGL
		TT10	08/25/92	S	Chloride	100.40			25000.000	25100.000	UGL
		TT10	08/25/92	S	Chloride	101.20			25000.000	25300.000	UGL
		TT10	08/25/92	S	Sulfate	88.00			20000.000	17600.000	UGL
		TT10	08/25/92	S	Sulfate	101.60			250000.000	254000.000	UGL
		TT10	08/25/92	S	Sulfate	101.60			250000.000	254000.000	UGL
ES	AKF	TT10	09/03/92	S	Chloride	90.75			4000.000	3630.000	UGL
		TT10	09/03/92	S	Chloride	100.00			25000.000	25000.000	UGL
		TT10	09/03/92	S	Chloride	100.40			25000.000	25100.000	UGL
		TT10	09/03/92	S	Sulfate	84.00			20000.000	16800.000	UGL
		TT10	09/03/92	S	Sulfate	102.00			250000.000	255000.000	UGL
		TT10	09/03/92	S	Sulfate	102.00			250000.000	255000.000	UGL
ES	ALH	00	08/07/92	S	Total petroleum hydrocarbons	66.99			4200.000	2850.000	UGL
		00	08/07/92	S	Total petroleum hydrocarbons	68.95			4200.000	2950.000	UGL
		00	08/07/92	S	Total petroleum hydrocarbons	73.83			4200.000	3140.000	UGL
ES	ALV	00	08/11/92	S	Total petroleum hydrocarbons	101.79			1120.000	1140.000	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

TANIS-QUINCH Phase I, RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ALU	00	08/17/92	S	Total petroleum hydrocarbons	100.00			1120.000	1120.000	UGG
ES	ANC	J015	09/28/92	S	Selenium	96.07			0.484	0.465	UGG
		J015	09/28/92	S	Selenium	101.92			7.830	7.900	UGG
		J015	09/28/92	S	Selenium	101.00			7.900	8.060	UGG
ES	ANF	J015	09/29/92	S	Selenium	104.07			0.492	0.512	UGG
		J015	09/29/92	S	Selenium	99.10			7.750	7.600	UGG
		J015	09/29/92	S	Selenium	99.11			7.000	7.810	UGG
ES	AMB	J001	08/25/92	S	Mercury	109.00			0.100	0.109	UGG
		J001	08/25/92	S	Mercury	100.79			0.735	0.761	UGG
		J001	08/25/92	S	Mercury	90.61			0.709	0.778	UGG
ES	ANF	J001	08/29/92	S	Mercury	94.00			0.100	0.094	UGG
		J001	08/29/92	S	Mercury	87.66			0.794	0.606	UGG
		J001	08/29/92	S	Mercury	89.97			0.798	0.718	UGG
ES	AOA	J016	08/25/92	S	Silver	92.78			0.776	0.720	UGG
		J016	08/25/92	S	Silver	95.91			7.830	7.510	UGG
		J016	08/25/92	S	Silver	91.76			7.000	7.340	UGG
		J016	08/25/92	S	Beryllium	102.27			4.850	4.960	UGG
		J016	08/25/92	S	Beryllium	100.82			49.000	49.400	UGG
		J016	08/25/92	S	Beryllium	96.96			49.300	47.000	UGG
		J016	08/25/92	S	Cadmium	97.53			4.850	4.730	UGG
		J016	08/25/92	S	Cadmium	95.51			49.000	46.000	UGG
		J016	08/25/92	S	Cadmium	92.29			49.300	45.300	UGG
		J016	08/25/92	S	Chromium	106.19			9.700	10.300	UGG
		J016	08/25/92	S	Chromium	94.69			97.900	92.700	UGG
		J016	08/25/92	S	Chromium	92.09			98.600	90.800	UGG
		J016	08/25/92	S	Copper	97.94			4.850	4.750	UGG
		J016	08/25/92	S	Copper	97.76			49.000	47.900	UGG
		J016	08/25/92	S	Copper	94.73			49.300	46.700	UGG
		J016	08/25/92	S	Nickel	100.21			4.850	4.260	UGG
		J016	08/25/92	S	Nickel	94.69			49.000	46.400	UGG
		J016	08/25/92	S	Nickel	92.49			49.300	45.000	UGG
		J016	08/25/92	S	Thallium	102.37			9.700	9.900	UGG
		J016	08/25/92	S	Thallium	97.04			97.900	95.000	UGG
		J016	08/25/92	S	Thallium	94.62			98.600	95.300	UGG
		J016	08/25/92	S	Zinc	96.19			9.700	9.330	UGG
		J016	08/25/92	S	Zinc	95.97			97.900	92.000	UGG
		J016	08/25/92	S	Zinc	91.20			98.600	90.000	UGG
ES	AOB	J016	09/08/92	S	Silver	85.72			0.706	0.606	UGG
		J016	09/08/92	S	Silver	95.10			7.900	7.300	UGG
		J016	09/08/92	S	Silver	95.36			7.000	7.400	UGG
		J016	09/08/92	S	Beryllium	105.00			4.910	5.100	UGG
		J016	09/08/92	S	Beryllium	101.81			49.000	50.000	UGG
		J016	09/08/92	S	Beryllium	95.00			49.000	49.200	UGG
		J016	09/08/92	S	Cadmium	100.61			4.910	4.940	UGG
		J016	09/08/92	S	Cadmium	95.36			49.000	47.300	UGG
		J016	09/08/92	S	Cadmium	95.79			49.000	46.000	UGG

Notes for Data-Flags: 1 = Results less than CRL but greater than CGL, 2 = Analyte required for reporting purposes but not currently certified, 3 = Analyte recovery outside of certified range but within acceptable limits



Tosco-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ACD	JS16	09/03/92	S	Chromium	102.85			9.820	10.100	UGG
				S	Chromium	96.46			99.800	95.500	UGG
				S	Chromium	93.69			99.800	95.300	UGG
				S	Copper	101.02			4.910	4.960	UGG
				S	Copper	100.00			49.500	49.300	UGG
				S	Copper	96.79			49.900	48.300	UGG
				S	Nickel	94.09			4.910	4.620	UGG
				S	Nickel	92.73			49.500	45.900	UGG
				S	Nickel	91.18			49.900	45.500	UGG
				S	Thallium	119.14			9.820	11.700	UGG
				S	Thallium	100.51			99.800	99.500	UGG
				S	Thallium	93.39			99.800	95.200	UGG
				S	Zinc	95.82			9.820	9.410	UGG
				S	Zinc	93.54			99.000	92.600	UGG
				S	Zinc	91.98			99.800	91.800	UGG
ES	APA	9801	08/17/92	S	Mercury	92.40			0.500	0.462	UGL
			08/17/92	S	Mercury	89.60			2.500	2.260	UGL
			08/17/92	S	Mercury	92.40			2.500	2.310	UGL
ES	APB	9801	08/13/92	S	Mercury	97.80			0.500	0.489	UGL
			08/13/92	S	Mercury	110.40			2.500	2.760	UGL
			08/13/92	S	Mercury	112.00			2.500	2.800	UGL
ES	APC	9801	08/28/92	S	Mercury	98.00			0.500	0.490	UGL
			08/28/92	S	Mercury	108.40			2.500	2.510	UGL
			08/28/92	S	Mercury	102.40			2.500	2.560	UGL
ES	ARA	LM12	09/02/92	S	1,3,5-Trinitrobenzene	90.43			1.150	1.040	UGG
			09/02/92	S	1,3,5-Trinitrobenzene	90.24			9.220	8.320	UGG
			09/02/92	S	1,3,5-Trinitrobenzene	92.08			9.220	8.490	UGG
			09/02/92	S	2,4,6-Trinitrotoluene	102.73			1.100	1.130	UGG
			09/02/92	S	2,4,6-Trinitrotoluene	97.27			8.800	8.560	UGG
			09/02/92	S	2,4,6-Trinitrotoluene	97.73			8.800	8.600	UGG
			09/02/92	S	2,4-Dinitrotoluene	94.31			1.230	1.160	UGG
			09/02/92	S	2,4-Dinitrotoluene	90.75			9.840	8.930	UGG
			09/02/92	S	2,4-Dinitrotoluene	91.16			9.840	8.970	UGG
			09/02/92	S	2-Nitrotoluene (TIC)	97.55			0.530	0.517	UGG
			09/02/92	S	2-Nitrotoluene (TIC)	95.18			22.800	21.700	UGG
			09/02/92	S	2-Nitrotoluene (TIC)	96.05			22.800	21.900	UGG
			09/02/92	S	Nitrobenzene	105.67			3.000	3.170	UGG
			09/02/92	S	Nitrobenzene	102.92			24.000	24.700	UGG
			09/02/92	S	Nitrobenzene	104.58			24.000	25.100	UGG
			09/02/92	S	Cyclonite (RBX)	91.82			1.100	1.010	UGG
			09/02/92	S	Cyclonite (RBX)	88.85			8.790	7.810	UGG
			09/02/92	S	Cyclonite (RBX)	91.81			8.790	8.070	UGG
ES	ARB	LM12	09/01/92	S	1,3,5-Trinitrobenzene	88.52			1.130	0.986	UGG
			09/01/92	S	1,3,5-Trinitrobenzene	87.74			9.220	8.090	UGG
			09/01/92	S	1,3,5-Trinitrobenzene	87.96			9.220	8.110	UGG
			09/01/92	S	2,4,6-Trinitrotoluene	101.82			1.100	1.120	UGG
			09/01/92	S	2,4,6-Trinitrotoluene	99.34			8.800	8.390	UGG
			09/01/92	S	2,4,6-Trinitrotoluene	95.57			8.800	8.410	UGG

Note for Data Flags: 1 = Results less than CRL but greater than CDB, 2 = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tampa North Phase I BFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Conc.	Recovered Conc.	Units
ES	ASB	LM12	09/01/92	S	2,4-Dinitrotoluene	98.37			1.230	1.210	UGG
		LM12	09/01/92	S	2,4-Dinitrotoluene	95.12			9.840	9.360	UGG
		LM12	09/01/92	S	2,4-Dinitrotoluene	96.84			9.840	9.430	UGG
		LM12	09/01/92	S	2-Nitrotoluene (TIC)	97.92			0.330	0.519	UGG
		LM12	09/01/92	S	2-Nitrotoluene (TIC)	92.11			22.800	21.000	UGG
		LM12	09/01/92	S	2-Nitrotoluene (TIC)	94.30			22.800	21.300	UGG
		LM12	09/01/92	S	2-Nitrotoluene (TIC)	98.83			45.600	44.700	UGG
		LM12	09/01/92	S	Nitrobenzene	106.67			3.800	3.200	UGG
		LM12	09/01/92	S	Nitrobenzene	102.50			24.000	24.000	UGG
		LM12	09/01/92	S	Nitrobenzene	102.50			24.000	24.600	UGG
		LM12	09/01/92	S	Cyclonite (RDX)	97.27			1.100	1.070	UGG
		LM12	09/01/92	S	Cyclonite (RDX)	87.83			8.790	7.720	UGG
		LM12	09/01/92	S	Cyclonite (RDX)	88.51			8.790	7.780	UGG
ES	ASK	00	08/20/92	S	Total petroleum hydrocarbons	102.48			1120.000	1150.000	UGG
ES	ATP	00	08/12/92	S	Total petroleum hydrocarbons	79.67			4180.000	3330.000	UGG
		00	08/12/92	S	Total petroleum hydrocarbons	79.67			4180.000	3330.000	UGG
ES	BDC	KF14	08/17/92	S	Total phosphates	103.30			20.000	20.700	UGG
		KF14	08/17/92	S	Total phosphates	96.73			80.000	77.400	UGG
		KF14	08/17/92	S	Total phosphates	97.63			80.000	78.100	UGG
ES	BDG	KF14	07/29/92	S	Total phosphates	92.30			20.000	18.500	UGG
		KF14	07/29/92	S	Total phosphates	96.30			80.000	77.200	UGG
		KF14	07/29/92	S	Total phosphates	99.23			80.000	79.400	UGG
ES	DEC	KY01	06/23/92	S	Cyanide	98.40			1.770	1.600	UGG
		KY01	06/23/92	S	Cyanide	98.91			7.260	6.600	UGG
		KY01	06/23/92	S	Cyanide	103.10			7.260	7.630	UGG
ES	DEE	KY01	08/04/92	S	Cyanide	101.04			1.930	1.930	UGG
		KY01	08/04/92	S	Cyanide	101.34			7.700	7.820	UGG
		KY01	08/04/92	S	Cyanide	102.21			7.700	7.870	UGG
ES	CIJA	UN18	02/12/93	S	2,4,6-Tribromophenol	34.80			100.000	34.000	UGG
		UN18	02/12/93	S	2-Fluorobiphenyl	72.80			30.000	34.000	UGG
		UN18	02/12/93	S	2-Fluorophenol	38.80			100.000	38.000	UGG
		UN18	02/12/93	S	Nitrobenzene-05	76.80			30.000	37.000	UGG
		UN18	02/12/93	S	Phenol-06	41.80			100.000	41.000	UGG
		UN18	02/12/93	S	Terphenyl-014	98.80			30.000	49.000	UGG
ES	CVBA	UN19	02/12/93	S	1,2-Dichloroethane-04	92.80			0.000	0.044	UGG
		UN19	02/12/93	S	4-Bromofluorobenzene	100.80			0.000	0.054	UGG
		UN19	02/12/93	S	Toluene-08	95.80			0.000	0.049	UGG
ES	DDFA	UN20	02/05/93	S	1,2-Dichloroethane-04	92.80			30.000	44.000	UGG
		UN20	02/05/93	S	4-Bromofluorobenzene	104.80			30.000	52.000	UGG
		UN20	02/05/93	S	Toluene-08	104.80			30.000	52.000	UGG
ES	DDJA	UN20	02/05/93	S	1,2-Dichloroethane-04	94.80			30.000	48.000	UGG
		UN20	02/05/93	S	4-Bromofluorobenzene	102.80			30.000	51.000	UGG
		UN20	02/05/93	S	Toluene-08	100.80			30.000	50.000	UGG

Notes for Data Flags: 1 = Results less than GLL but greater than GLO, 2 = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tecale-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	BOLA	UN20	02/10/93	S	1,2-Dichloroethane-84	96.00			50.000	48.000	UGL
		UN20	02/10/93	S	4-Bromofluorobenzene	98.00			50.000	49.000	UGL
		UN20	02/10/93	S	Toluene-88	100.00			50.000	50.000	UGL
ES	DEDA	TT10	02/09/93	S	Bromide	91.80	1		1000.000	918.000	UGL
		TT10	02/09/93	S	Bromide	100.00			20000.000	20000.000	UGL
		TT10	02/09/93	S	Bromide	100.00			20000.000	20000.000	UGL
		TT10	02/09/93	S	Chloride	93.00			4000.000	3720.000	UGL
		TT10	02/09/93	S	Chloride	99.60			25000.000	24900.000	UGL
		TT10	02/09/93	S	Chloride	100.00			25000.000	25000.000	UGL
		TT10	02/09/93	S	Fluoride	92.40			2300.000	2310.000	UGL
		TT10	02/09/93	S	Fluoride	90.93			7500.000	6820.000	UGL
		TT10	02/09/93	S	Fluoride	91.20			7500.000	6840.000	UGL
		TT10	02/09/93	S	Sulfate	87.50			20000.000	17500.000	UGL
		TT10	02/09/93	S	Sulfate	99.60			250000.000	249000.000	UGL
		TT10	02/09/93	S	Sulfate	100.00			250000.000	250000.000	UGL
ES	GDF	UN17	05/27/92	S	Nitroguanidine	91.73			61.700	56.600	UGL
		UN17	05/27/92	S	Nitroguanidine	94.93			493.000	448.000	UGL
		UN17	05/27/92	S	Nitroguanidine	96.96			493.000	478.000	UGL
	JG	UN17	06/18/92	S	Nitroguanidine	89.18			536.000	478.000	UGL
		UN17	06/18/92	S	Nitroguanidine	96.08			536.000	515.000	UGL
	ES	ONE	LV15	06/08/92	S	Nitroguanidine	95.69			0.789	0.735
LV15			06/08/92	S	Nitroguanidine	85.70			7.900	6.770	UGG
LV15			06/08/92	S	Nitroguanidine	86.58			7.900	6.840	UGG
ES	ONF	LV15	06/19/92	S	Nitroguanidine	106.46			0.790	0.841	UGG
		LV15	06/19/92	S	Nitroguanidine	88.99			7.900	7.030	UGG
		LV15	06/19/92	S	Nitroguanidine	90.38			7.900	7.140	UGG
ES	ONG	LV15	06/16/92	S	Nitroguanidine	82.78			0.790	0.654	UGG
		LV15	06/16/92	S	Nitroguanidine	87.09			7.900	6.880	UGG
		LV15	06/16/92	S	Nitroguanidine	94.56			7.900	7.470	UGG
ES	P02	UN14	05/21/92	S	Silvex	38.18			0.989	0.378	UGL
		UN14	05/21/92	S	2,4-Dichlorophenoxyacetic acid / 2,4-D	33.78			1.080	0.635	UGL
ES	RNY	LN11	07/31/92	S	Silvex	112.82			0.078	0.088	UGG
		LN11	07/31/92	S	2,4-Dichlorophenoxyacetic acid / 2,4-D	94.00			0.150	0.141	UGG
ES	VAM	TF18	05/15/92	S	Cyanide	111.46			9.600	10.700	UGL
		TF18	05/15/92	S	Cyanide	99.17			24.100	23.900	UGL
		TF18	05/15/92	S	Cyanide	100.00			24.100	24.100	UGL
ES	VAP	TF18	06/12/92	S	Cyanide	73.94			9.600	7.290	UGL
		TF18	06/12/92	S	Cyanide	83.48			24.100	20.100	UGL
		TF18	06/12/92	S	Cyanide	83.48			24.100	20.100	UGL
ES	VAB	TF18	06/22/92	S	Cyanide	90.73			9.600	8.710	UGL
		TF18	06/22/92	S	Cyanide	95.44			24.100	23.000	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CDB, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tosco-Mexico Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Detn. Flags	Detn. Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	VAR	TF18	06/22/92	S	Cyanide	96.48			24.100	23.300	UGL
ES	VAR	TF18	07/06/92	S	Cyanide	109.38			9.600	10.500	UGL
		TF18	07/06/92	S	Cyanide	102.07			24.100	24.600	UGL
		TF18	07/06/92	S	Cyanide	107.47			24.100	25.900	UGL
ES	VAR	TF18	07/10/92	S	Cyanide	98.85			9.600	9.490	UGL
		TF18	07/10/92	S	Cyanide	92.53			24.100	22.300	UGL
		TF18	07/10/92	S	Cyanide	105.81			24.100	25.500	UGL
ES	VAR	TF18	07/21/92	S	Cyanide	118.75			9.600	11.400	UGL
		TF18	07/21/92	S	Cyanide	100.00			24.100	24.100	UGL
		TF18	07/21/92	S	Cyanide	100.00			24.100	24.100	UGL
ES	VAR	TF18	07/22/92	S	Cyanide	106.25			9.600	10.200	UGL
		TF18	07/22/92	S	Cyanide	94.19			24.100	22.700	UGL
		TF18	07/22/92	S	Cyanide	98.76			24.100	23.800	UGL
ES	VAR	TF18	08/03/92	S	Cyanide	87.40			9.600	8.410	UGL
		TF18	08/03/92	S	Cyanide	93.36			24.100	22.500	UGL
		TF18	08/03/92	S	Cyanide	101.24			24.100	24.400	UGL
ES	VAR	TF18	08/11/92	S	Cyanide	90.43			9.600	8.700	UGL
		TF18	08/11/92	S	Cyanide	102.49			24.100	24.700	UGL
		TF18	08/11/92	S	Cyanide	102.49			24.100	24.700	UGL
ES	VAR	TF18	08/20/92	S	Cyanide	97.50			9.600	9.340	UGL
		TF18	08/20/92	S	Cyanide	104.15			24.100	25.100	UGL
		TF18	08/20/92	S	Cyanide	104.15			24.100	25.100	UGL
ES	XNS	KT05	06/12/92	S	Bromide	83.28			10.000	8.320	UGL
		KT05	06/12/92	S	Chloride	89.40			12.500	11.200	UGL
		KT05	06/12/92	S	Chloride	96.00			90.000	86.400	UGL
		KT05	06/12/92	S	Chloride	96.22			90.000	86.400	UGL
		KT05	06/12/92	S	Fluoride	104.44			6.250	6.540	UGL
		KT05	06/12/92	S	Fluoride	117.25			40.000	46.900	UGL
		KT05	06/12/92	S	Fluoride	118.00			40.000	47.200	UGL
		KT05	06/12/92	S	Sulfate	88.80			125.000	111.000	UGL
		KT05	06/12/92	S	Sulfate	93.25			400.000	373.000	UGL
		KT05	06/12/92	S	Sulfate	93.25			400.000	373.000	UGL
ES	XNT	KT05	06/24/92	S	Chloride	88.00			12.500	11.000	UGL
		KT05	06/24/92	S	Chloride	93.89			90.000	84.500	UGL
		KT05	06/24/92	S	Chloride	94.34			90.000	85.100	UGL
		KT05	06/24/92	S	Sulfate	96.80			125.000	121.000	UGL
		KT05	06/24/92	S	Sulfate	91.25			400.000	365.000	UGL
		KT05	06/24/92	S	Sulfate	92.75			400.000	371.000	UGL
ES	XNU	KT05	06/28/92	S	Chloride	94.40			12.500	11.800	UGL
		KT05	06/28/92	S	Chloride	93.36			90.000	84.200	UGL
		KT05	06/28/92	S	Chloride	93.00			90.000	85.300	UGL
		KT05	06/28/92	S	Sulfate	93.20			125.000	119.000	UGL
		KT05	06/28/92	S	Sulfate	90.75			400.000	365.000	UGL

Notes for Data Flags: I = Results less than CRL but greater than CGL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	XNU	KT05	06/30/92	S	Sulfate	93.00			400.000	372.000	UGG
ES	XNV	KT05	07/06/92	S	Chloride	98.40			12.500	12.300	UGG
		KT05	07/06/92	S	Chloride	102.67			90.000	92.400	UGG
		KT05	07/06/92	S	Chloride	102.67			90.000	92.400	UGG
		KT05	07/06/92	S	Sulfate	97.60			125.000	122.000	UGG
		KT05	07/06/92	S	Sulfate	98.50			400.000	394.000	UGG
		KT05	07/06/92	S	Sulfate	98.50			400.000	394.000	UGG
ES	XNW	KT05	07/09/92	S	Chloride	99.20			12.500	12.400	UGG
		KT05	07/09/92	S	Chloride	103.33			90.000	93.000	UGG
		KT05	07/09/92	S	Chloride	103.78			90.000	93.400	UGG
		KT05	07/09/92	S	Sulfate	97.60			125.000	122.000	UGG
		KT05	07/09/92	S	Sulfate	99.50			400.000	398.000	UGG
		KT05	07/09/92	S	Sulfate	100.25			400.000	401.000	UGG
ES	XNX	KT05	07/13/92	S	Chloride	100.80			12.500	12.600	UGG
		KT05	07/13/92	S	Chloride	100.56			90.000	90.500	UGG
		KT05	07/13/92	S	Chloride	101.11			90.000	91.000	UGG
		KT05	07/13/92	S	Sulfate	96.00			125.000	120.000	UGG
		KT05	07/13/92	S	Sulfate	97.50			400.000	390.000	UGG
		KT05	07/13/92	S	Sulfate	98.00			400.000	392.000	UGG
ES	XNY	KT05	07/16/92	S	Chloride	96.00			12.500	12.000	UGG
		KT05	07/16/92	S	Chloride	103.00			90.000	92.700	UGG
		KT05	07/16/92	S	Chloride	104.11			90.000	93.700	UGG
		KT05	07/16/92	S	Sulfate	95.20			125.000	119.000	UGG
		KT05	07/16/92	S	Sulfate	99.75			400.000	399.000	UGG
		KT05	07/16/92	S	Sulfate	101.00			400.000	404.000	UGG
ES	XNZ	KT05	07/20/92	S	Chloride	97.60			12.500	12.200	UGG
		KT05	07/20/92	S	Chloride	103.11			90.000	92.800	UGG
		KT05	07/20/92	S	Chloride	103.11			90.000	92.800	UGG
		KT05	07/20/92	S	Sulfate	96.80			125.000	121.000	UGG
		KT05	07/20/92	S	Sulfate	100.50			400.000	402.000	UGG
		KT05	07/20/92	S	Sulfate	100.75			400.000	403.000	UGG
ES	XIU	TT10	05/27/92	S	Bromide	99.50			2000.000	1190.000	UGL
		TT10	05/27/92	S	Bromide	102.50			20000.000	20500.000	UGL
		TT10	05/27/92	S	Bromide	102.50			20000.000	20500.000	UGL
		TT10	05/27/92	S	Chloride	95.25			4000.000	3810.000	UGL
		TT10	05/27/92	S	Chloride	101.60			25000.000	25400.000	UGL
		TT10	05/27/92	S	Chloride	101.60			25000.000	25400.000	UGL
		TT10	05/27/92	S	Sulfate	90.50			20000.000	18100.000	UGL
		TT10	05/27/92	S	Sulfate	100.80			250000.000	252000.000	UGL
		TT10	05/27/92	S	Sulfate	101.20			250000.000	253000.000	UGL
ES	XIV	TT10	06/23/92	S	Chloride	92.75			4000.000	3710.000	UGL
		TT10	06/23/92	S	Chloride	102.00			25000.000	25500.000	UGL
		TT10	06/23/92	S	Chloride	102.80			25000.000	25700.000	UGL
		TT10	06/23/92	S	Sulfate	89.50			20000.000	17900.000	UGL
		TT10	06/23/92	S	Sulfate	100.40			250000.000	251000.000	UGL
		TT10	06/23/92	S	Sulfate	100.40			250000.000	251000.000	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CGL, 2 = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Toxicology Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Conc.	Recovered Conc.	Units
ES	XIV	TT10	07/07/92	S	Chloride	93.30			4000.000	3740.000	UGL
		TT10	07/07/92	S	Chloride	100.40			25000.000	25100.000	UGL
		TT10	07/07/92	S	Chloride	100.80			25000.000	25200.000	UGL
		TT10	07/07/92	S	Sulfate	87.50			20000.000	17900.000	UGL
		TT10	07/07/92	S	Sulfate	100.80			25000.000	25200.000	UGL
		TT10	07/07/92	S	Sulfate	100.80			25000.000	25200.000	UGL
ES	XIX	TT10	07/15/92	S	Chloride	92.25			4000.000	3690.000	UGL
		TT10	07/15/92	S	Chloride	100.40			25000.000	25100.000	UGL
		TT10	07/15/92	S	Chloride	100.80			25000.000	25200.000	UGL
		TT10	07/15/92	S	Sulfate	89.30			20000.000	17900.000	UGL
		TT10	07/15/92	S	Sulfate	100.40			25000.000	25100.000	UGL
		TT10	07/15/92	S	Sulfate	100.80			25000.000	25200.000	UGL
ES	XIV	TT10	07/21/92	S	Chloride	91.75			4000.000	3670.000	UGL
		TT10	07/21/92	S	Chloride	100.40			25000.000	25100.000	UGL
		TT10	07/21/92	S	Chloride	100.80			25000.000	25200.000	UGL
		TT10	07/21/92	S	Sulfate	89.80			20000.000	17800.000	UGL
		TT10	07/21/92	S	Sulfate	100.80			25000.000	25200.000	UGL
		TT10	07/21/92	S	Sulfate	100.80			25000.000	25200.000	UGL
ES	XIZ	TT10	07/29/92	S	Bromide	80.80			2000.000	1600.000	UGL
		TT10	07/29/92	S	Bromide	101.30			20000.000	20300.000	UGL
		TT10	07/29/92	S	Bromide	101.50			20000.000	20300.000	UGL
		TT10	07/29/92	S	Chloride	101.88			8000.000	8130.000	UGL
		TT10	07/29/92	S	Chloride	100.00			25000.000	25000.000	UGL
		TT10	07/29/92	S	Chloride	100.00			25000.000	25000.000	UGL
		TT10	07/29/92	S	Fluoride	97.60			5000.000	4880.000	UGL
		TT10	07/29/92	S	Fluoride	93.87			7500.000	7040.000	UGL
		TT10	07/29/92	S	Fluoride	94.40			7500.000	7080.000	UGL
		TT10	07/29/92	S	Sulfate	89.30			20000.000	17900.000	UGL
		TT10	07/29/92	S	Sulfate	100.40			25000.000	25100.000	UGL
		TT10	07/29/92	S	Sulfate	100.40			25000.000	25100.000	UGL
ES	XIII	KF14	06/26/92	S	Total phosphates	118.50			20.000	23.700	UGL
		KF14	06/26/92	S	Total phosphates	100.88			80.000	80.700	UGL
		KF14	06/26/92	S	Total phosphates	104.38			80.000	83.300	UGL
ES	XIII	KF14	06/27/92	S	Total phosphates	77.50			0.080	0.062	UGL
		KF14	06/27/92	S	Total phosphates	88.31			0.320	0.257	UGL
		KF14	06/27/92	S	Total phosphates	83.13			0.320	0.266	UGL
ES	XIII	KF14	07/06/92	S	Total phosphates	92.00			20.000	18.400	UGL
		KF14	07/06/92	S	Total phosphates	94.75			80.000	75.800	UGL
		KF14	07/06/92	S	Total phosphates	96.63			80.000	77.300	UGL
ES	XIII	KF14	07/13/92	S	Total phosphates	93.25			80.000	76.600	UGL
		KF14	07/13/92	S	Total phosphates	93.13			80.000	76.100	UGL
ES	XIII	KF14	07/21/92	S	Total phosphates	93.00			20.000	18.600	UGL
		KF14	07/21/92	S	Total phosphates	93.30			80.000	76.800	UGL
		KF14	07/21/92	S	Total phosphates	96.25			80.000	77.000	UGL

Notes for Data Flags: 1 = Results less than CLL but greater than CGL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	XWU	KF14	07/16/92	S	Total phosphates	105.00			20.000	21.000	UGG
		KF14	07/16/92	S	Total phosphates	99.38			80.000	79.500	UGG
		KF14	07/16/92	S	Total phosphates	101.25			80.000	81.000	UGG
ES	XWV	KF14	07/29/92	S	Total phosphates	92.50			20.000	18.500	UGG
		KF14	07/29/92	S	Total phosphates	96.50			80.000	77.200	UGG
		KF14	07/29/92	S	Total phosphates	99.25			80.000	79.400	UGG
ES	XWY	KF14	08/09/92	S	Total phosphates	85.60			25.000	21.400	UGG
		KF14	08/09/92	S	Total phosphates	93.29			85.000	79.300	UGG
		KF14	08/09/92	S	Total phosphates	93.29			85.000	79.300	UGG
ES	XWY	KF14	08/17/92	S	Total phosphates	103.50			20.000	20.700	UGG
		KF14	08/17/92	S	Total phosphates	96.75			80.000	77.400	UGG
		KF14	08/17/92	S	Total phosphates	97.63			80.000	78.100	UGG
ES	XOV	SD09	05/18/92	S	Thallium	95.00			10.000	9.500	UGL
		SD09	05/18/92	S	Thallium	89.00			20.000	17.800	UGL
		SD09	05/18/92	S	Thallium	95.00			20.000	19.000	UGL
F	OZ	SD09	06/18/92	S	Thallium	94.00			10.000	9.400	UGL
		SD09	06/18/92	S	Thallium	92.00			20.000	18.400	UGL
		SD09	06/18/92	S	Thallium	93.00			20.000	18.600	UGL
ES	XRR	UN02	05/15/92	S	PCB 1016	80.00			3.750	3.000	UGL
		UN02	05/15/92	S	PCB 1260	85.33			3.750	3.200	UGL
ES	XTW	SD21	05/18/92	S	Selenium	96.00			5.000	4.800	UGL
		SD21	05/18/92	S	Selenium	96.93			75.000	72.700	UGL
		SD21	05/18/92	S	Selenium	98.13			75.000	73.600	UGL
ES	XWQ	SD20	05/18/92	S	Lead	96.00			10.000	9.600	UGL
		SD20	05/18/92	S	Lead	101.13			80.000	80.900	UGL
		SD20	05/18/92	S	Lead	101.88			80.000	81.500	UGL
ES	XWU	SD20	06/17/92	S	Lead	98.00			10.000	9.800	UGL
		SD20	06/17/92	S	Lead	94.75			80.000	75.800	UGL
		SD20	06/17/92	S	Lead	96.00			80.000	76.800	UGL
ES	XWY	SD20	07/15/92	S	Lead	81.00			10.000	8.100	UGL
		SD20	07/15/92	S	Lead	97.38			80.000	77.900	UGL
		SD20	07/15/92	S	Lead	98.13			80.000	78.500	UGL
ES	XXL	TF22	05/14/92	S	Nitrite, nitrate - nonspecified	96.00			20.000	19.200	UGL
		TF22	05/14/92	S	Nitrite, nitrate - nonspecified	98.00			150.000	147.000	UGL
		TF22	05/14/92	S	Nitrite, nitrate - nonspecified	98.67			150.000	148.000	UGL
ES	XOM	TF22	06/22/92	S	Nitrite, nitrate - nonspecified	98.50			20.000	19.700	UGL
		TF22	06/22/92	S	Nitrite, nitrate - nonspecified	101.33			150.000	152.000	UGL
		TF22	06/22/92	S	Nitrite, nitrate - nonspecified	101.33			150.000	152.000	UGL
ES	XOM	TF22	07/01/92	S	Nitrite, nitrate - nonspecified	96.00			20.000	19.200	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than LOD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Teosie-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	XXN	TF22	07/01/92	S	Nitrite, nitrate - nonspecified	96.67			150.000	143.000	UGL
		TF22	07/01/92	S	Nitrite, nitrate - nonspecified	97.33			150.000	146.000	UGL
ES	XXO	TF22	07/14/92	S	Nitrite, nitrate - nonspecified	98.30			20.000	19.700	UGL
		TF22	07/14/92	S	Nitrite, nitrate - nonspecified	99.33			150.000	149.000	UGL
		TF22	07/14/92	S	Nitrite, nitrate - nonspecified	99.33			150.000	149.000	UGL
ES	XXP	TF22	08/06/92	S	Nitrite, nitrate - nonspecified	96.00			20.000	19.200	UGL
		TF22	08/06/92	S	Nitrite, nitrate - nonspecified	98.67			150.000	148.000	UGL
		TF22	08/06/92	S	Nitrite, nitrate - nonspecified	99.33			150.000	149.000	UGL
ES	XXR	TF22	08/19/92	S	Nitrite, nitrate - nonspecified	96.30			20.000	19.300	UGL
		TF22	08/19/92	S	Nitrite, nitrate - nonspecified	101.33			150.000	152.000	UGL
		TF22	08/19/92	S	Nitrite, nitrate - nonspecified	102.00			150.000	153.000	UGL
ES	XXS	TF22	09/01/92	S	Nitrite, nitrate - nonspecified	99.00			20.000	19.800	UGL
		TF22	09/01/92	S	Nitrite, nitrate - nonspecified	99.33			150.000	149.000	UGL
		TF22	09/01/92	S	Nitrite, nitrate - nonspecified	100.00			150.000	150.000	UGL
ES	YAT	LM12	06/08/92	S	1,3,5-Trinitrobenzene	71.81			1.300	0.991	UGG
		LM12	06/09/92	S	1,3,5-Trinitrobenzene	81.67			9.220	7.530	UGG
		LM12	06/09/92	S	1,3,5-Trinitrobenzene	86.77			9.220	8.000	UGG
		LM12	06/08/92	S	2,4,6-Trinitrotoluene	83.33			1.320	1.100	UGG
		LM12	06/09/92	S	2,4,6-Trinitrotoluene	93.30			8.800	8.210	UGG
		LM12	06/09/92	S	2,4,6-Trinitrotoluene	99.43			8.800	8.750	UGG
		LM12	06/08/92	S	2,4-Dinitrotoluene	68.24			1.480	1.010	UGG
		LM12	06/09/92	S	2,4-Dinitrotoluene	73.91			9.840	7.470	UGG
		LM12	06/09/92	S	2,4-Dinitrotoluene	81.00			9.840	7.970	UGG
		LM12	06/08/92	S	2-Nitrotoluene (TIC)	82.08			0.636	0.522	UGG
		LM12	06/09/92	S	2-Nitrotoluene (TIC)	91.67			22.800	20.900	UGG
		LM12	06/09/92	S	2-Nitrotoluene (TIC)	96.05			22.800	21.900	UGG
		LM12	06/09/92	S	2-Nitrotoluene (TIC)	95.83			43.600	43.700	UGG
		LM12	06/08/92	S	Nitrobenzene	82.83			3.670	3.040	UGG
		LM12	06/09/92	S	Nitrobenzene	89.39			24.500	21.900	UGG
		LM12	06/09/92	S	Nitrobenzene	93.92			24.500	23.500	UGG
		LM12	06/08/92	S	Cyclonite (RDX)	84.09			1.320	1.110	UGG
		LM12	06/09/92	S	Cyclonite (RDX)	88.17			8.790	7.750	UGG
		LM12	06/09/92	S	Cyclonite (RDX)	93.86			8.790	8.230	UGG
ES	YAV	LM12	06/21/92	S	1,3,5-Trinitrobenzene	53.48			1.150	0.615	UGG
		LM12	06/21/92	S	1,3,5-Trinitrobenzene	76.79			9.220	7.080	UGG
		LM12	06/21/92	S	1,3,5-Trinitrobenzene	80.99			9.220	7.430	UGG
		LM12	06/21/92	S	2,4,6-Trinitrotoluene	86.35			1.100	0.952	UGG
		LM12	06/21/92	S	2,4,6-Trinitrotoluene	98.52			8.800	8.670	UGG
		LM12	06/21/92	S	2,4,6-Trinitrotoluene	101.82			8.800	8.960	UGG
		LM12	06/21/92	S	2,4-Dinitrotoluene	74.08			1.230	0.921	UGG
		LM12	06/21/92	S	2,4-Dinitrotoluene	82.42			9.840	8.110	UGG
		LM12	06/21/92	S	2,4-Dinitrotoluene	85.06			9.840	8.370	UGG
		LM12	06/21/92	S	2-Nitrotoluene (TIC)	86.42			0.530	0.438	UGG
		LM12	06/21/92	S	2-Nitrotoluene (TIC)	106.38			22.800	24.300	UGG
		LM12	06/21/92	S	2-Nitrotoluene (TIC)	109.45			22.800	25.000	UGG
		LM12	06/21/92	S	2-Nitrotoluene (TIC)	96.27			45.600	43.900	UGG
		LM12	06/21/92	S	Nitrobenzene	88.07			3.000	2.400	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CCL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits



Tosco-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Unit
ES	YAV	LM12	06/21/92	S	Nitrobenzene	95.88			24.500	23.000	UGG
		LM12	06/21/92	S	Nitrobenzene	95.10			24.500	23.300	UGG
		LM12	06/21/92	S	Cyclonite (RDX)	100.00			1.100	1.100	UGG
		LM12	06/21/92	S	Cyclonite (RDX)	95.68			8.790	8.410	UGG
		LM12	06/21/92	S	Cyclonite (RDX)	96.02			8.790	8.440	UGG
ES	YAM	LM12	06/23/92	S	1,3,5-Trinitrobenzene	23.13			1.150	0.266	UGG
		LM12	06/23/92	S	1,3,5-Trinitrobenzene	72.13			9.220	6.650	UGG
		LM12	06/24/92	S	1,3,5-Trinitrobenzene	74.84			9.220	6.900	UGG
		LM12	06/23/92	S	2,4,6-Trinitrotoluene	68.00			1.100	0.748	UGG
		LM12	06/24/92	S	2,4,6-Trinitrotoluene	97.27			8.800	8.560	UGG
		LM12	06/23/92	S	2,4,6-Trinitrotoluene	97.50			8.800	8.580	UGG
		LM12	06/23/92	S	2,4-Dinitrotoluene	80.89			1.230	0.995	UGG
		LM12	06/24/92	S	2,4-Dinitrotoluene	83.94			9.840	8.260	UGG
		LM12	06/23/92	S	2,4-Dinitrotoluene	87.09			9.840	8.570	UGG
		LM12	06/23/92	S	2-Nitrotoluene (TIC)	97.55			0.530	0.517	UGG
		LM12	06/23/92	S	2-Nitrotoluene (TIC)	109.21			22.800	24.900	UGG
		LM12	06/24/92	S	2-Nitrotoluene (TIC)	109.21			22.800	24.900	UGG
		LM12	06/24/92	S	2-Nitrotoluene (TIC)	100.44			45.600	45.800	UGG
		LM12	06/23/92	S	Nitrobenzene	92.16			3.060	2.820	UGG
		LM12	06/24/92	S	Nitrobenzene	94.29			24.500	23.100	UGG
		LM12	06/23/92	S	Nitrobenzene	96.73			24.500	23.700	UGG
		LM12	06/23/92	S	Cyclonite (RDX)	117.27			1.100	1.290	UGG
		LM12	06/24/92	S	Cyclonite (RDX)	96.47			8.790	8.480	UGG
		LM12	06/23/92	S	Cyclonite (RDX)	97.84			8.790	8.600	UGG
ES	YAZ	LM12	07/02/92	S	1,3,5-Trinitrobenzene	84.17			1.150	0.968	UGG
		LM12	07/02/92	S	1,3,5-Trinitrobenzene	85.90			9.220	7.920	UGG
		LM12	07/02/92	S	1,3,5-Trinitrobenzene	88.72			9.220	8.180	UGG
		LM12	07/02/92	S	2,4,6-Trinitrotoluene	98.18			1.100	1.080	UGG
		LM12	07/02/92	S	2,4,6-Trinitrotoluene	100.00			8.800	8.800	UGG
		LM12	07/02/92	S	2,4,6-Trinitrotoluene	101.93			8.800	8.970	UGG
		LM12	07/02/92	S	2,4-Dinitrotoluene	83.74			1.230	1.030	UGG
		LM12	07/02/92	S	2,4-Dinitrotoluene	86.38			9.840	8.500	UGG
		LM12	07/02/92	S	2,4-Dinitrotoluene	87.09			9.840	8.570	UGG
		LM12	07/02/92	S	2-Nitrotoluene (TIC)	98.11			0.530	0.520	UGG
		LM12	07/02/92	S	2-Nitrotoluene (TIC)	106.58			22.800	24.300	UGG
		LM12	07/02/92	S	2-Nitrotoluene (TIC)	107.02			22.800	24.400	UGG
		LM12	07/02/92	S	2-Nitrotoluene (TIC)	95.61			45.600	43.600	UGG
		LM12	07/02/92	S	Nitrobenzene	90.52			3.060	2.770	UGG
		LM12	07/02/92	S	Nitrobenzene	95.88			24.500	23.000	UGG
		LM12	07/02/92	S	Nitrobenzene	95.88			24.500	23.000	UGG
		LM12	07/02/92	S	Cyclonite (RDX)	94.55			1.100	1.040	UGG
		LM12	07/02/92	S	Cyclonite (RDX)	97.16			8.790	8.540	UGG
		LM12	07/02/92	S	Cyclonite (RDX)	97.27			8.790	8.550	UGG
ES	YGS	JS16	06/10/92	S	Silver	95.58			0.795	0.744	UGG
		JS16	06/10/92	S	Silver	92.47			7.970	7.370	UGG
		JS16	06/10/92	S	Silver	90.85			7.980	7.250	UGG
		JS16	06/10/92	S	Beryllium	101.61			4.970	5.040	UGG
		JS16	06/10/92	S	Beryllium	94.78			49.800	47.280	UGG
		JS16	06/10/92	S	Beryllium	94.99			49.900	47.200	UGG
		JS16	06/10/92	S	Cadmium	92.56			4.970	4.680	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CGL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tissue-Matrix Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Conc.	Recovered Conc.	Units
ES	YGS	JS16	06/10/92	S	Cadmium	90.16			49.800	44.900	UGG
		JS16	06/10/92	S	Cadmium	89.78			49.900	44.800	UGG
		JS16	06/10/92	S	Chromium	107.65			9.940	10.700	UGG
		JS16	06/10/92	S	Chromium	92.77			99.800	92.400	UGG
		JS16	06/10/92	S	Chromium	92.18			99.800	92.000	UGG
		JS16	06/10/92	S	Copper	92.76			4.970	4.610	UGG
		JS16	06/10/92	S	Copper	92.77			49.800	46.200	UGG
		JS16	06/10/92	S	Copper	92.59			49.900	46.200	UGG
		JS16	06/10/92	S	Nickel	94.77			4.970	4.710	UGG
		JS16	06/10/92	S	Nickel	88.55			49.800	44.100	UGG
		JS16	06/10/92	S	Nickel	89.78			49.900	44.800	UGG
		JS16	06/10/92	S	Thallium	106.44			9.940	10.600	UGG
		JS16	06/10/92	S	Thallium	95.48			99.600	95.300	UGG
		JS16	06/10/92	S	Thallium	89.78			99.800	89.600	UGG
		JS16	06/10/92	S	Zinc	111.67			9.940	11.100	UGG
		JS16	06/10/92	S	Zinc	94.48			99.600	94.100	UGG
		JS16	06/10/92	S	Zinc	90.58			99.800	90.400	UGG
ES	YGT	JS16	06/16/92	S	Silver	94.13			0.800	0.733	UGG
		JS16	06/16/92	S	Silver	92.81			7.990	7.360	UGG
		JS16	06/16/92	S	Silver	93.21			7.990	7.410	UGG
		JS16	06/16/92	S	Beryllium	98.80			5.000	4.940	UGG
		JS16	06/16/92	S	Beryllium	95.16			49.600	47.200	UGG
		JS16	06/16/92	S	Beryllium	95.17			49.700	47.300	UGG
		JS16	06/16/92	S	Cadmium	94.80			5.000	4.700	UGG
		JS16	06/16/92	S	Cadmium	90.32			49.600	44.800	UGG
		JS16	06/16/92	S	Cadmium	91.77			49.700	45.600	UGG
		JS16	06/16/92	S	Chromium	99.51			10.000	9.990	UGG
		JS16	06/16/92	S	Chromium	90.42			99.100	89.800	UGG
		JS16	06/16/92	S	Chromium	90.64			99.400	90.100	UGG
		JS16	06/16/92	S	Copper	91.00			5.000	4.550	UGG
		JS16	06/16/92	S	Copper	92.74			49.600	46.000	UGG
		JS16	06/16/92	S	Copper	92.96			49.700	46.200	UGG
		JS16	06/16/92	S	Nickel	93.80			5.000	4.690	UGG
		JS16	06/16/92	S	Nickel	87.70			49.600	43.500	UGG
		JS16	06/16/92	S	Nickel	88.95			49.700	44.200	UGG
		JS16	06/16/92	S	Thallium	84.20			10.000	8.420	UGG
		JS16	06/16/92	S	Thallium	88.90			99.100	88.100	UGG
		JS16	06/16/92	S	Thallium	87.82			99.400	86.500	UGG
		JS16	06/16/92	S	Zinc	103.80			10.000	10.300	UGG
		JS16	06/16/92	S	Zinc	92.33			99.100	91.500	UGG
		JS16	06/16/92	S	Zinc	92.96			99.400	92.400	UGG
ES	YHR	J801	06/18/92	S	Mercury	120.80			0.100	0.120	UGG
		J801	06/18/92	S	Mercury	109.90			0.708	0.846	UGG
		J801	06/18/92	S	Mercury	167.53			0.797	0.857	UGG
ES	YHS	J801	06/17/92	S	Mercury	106.80			0.100	0.106	UGG
		J801	06/17/92	S	Mercury	106.65			0.797	0.830	UGG
		J801	06/17/92	S	Mercury	96.24			0.798	0.788	UGG
ES	YH2	J801	07/05/92	S	Mercury	139.30			0.896	0.134	UGG
		J801	07/05/92	S	Mercury	104.97			0.764	0.808	UGG

Notes for Data Flags: 1 = Results less than CLL but greater than CLD, S = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Teale-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	YNZ	J801	07/03/92	S	Mercury	105.48			0.766	0.808	UGG
ES	YIL	8022	05/20/92	S	Arsenic	108.00			5.000	5.400	UGL
		8022	05/20/92	S	Arsenic	90.93			75.000	68.200	UGL
		8022	05/20/92	S	Arsenic	92.67			75.000	69.500	UGL
ES	YIP	8022	06/17/92	S	Arsenic	102.00			5.000	5.100	UGL
		8022	06/17/92	S	Arsenic	97.87			75.000	73.480	UGL
		8022	06/17/92	S	Arsenic	98.00			75.000	73.500	UGL
ES	YIS	8022	07/10/92	S	Arsenic	98.00			5.000	4.900	UGL
		8022	07/10/92	S	Arsenic	90.25			80.000	72.200	UGL
		8022	07/10/92	S	Arsenic	90.75			80.000	72.600	UGL
ES	YIV	8022	07/28/92	S	Arsenic	112.00			5.000	5.600	UGL
		8022	07/28/92	S	Arsenic	96.80			75.000	72.600	UGL
		8022	07/28/92	S	Arsenic	98.53			75.000	73.900	UGL
ES	YIZ	8022	08/21/92	S	Arsenic	106.00			5.000	5.300	UGL
		8022	08/21/92	S	Arsenic	97.07			75.000	72.800	UGL
		8022	08/21/92	S	Arsenic	99.07			75.000	74.300	UGL
	J0	UM18	05/13/92	S	2,4,6-Tribromophenol	73.00			100.000	73.000	UGL
		UM18	05/13/92	S	2-Fluorobiphenyl	84.00			50.000	42.000	UGL
		UM18	05/13/92	S	2-Fluorophenol	64.00			100.000	64.000	UGL
		UM18	05/13/92	S	Nitrobenzene-D5	68.00			50.000	34.000	UGL
		UM18	05/13/92	S	Phenol-D6	48.00			100.000	48.000	UGL
		UM18	05/13/92	S	Terphenyl-D14	110.00			50.000	55.000	UGL
ES	YJX	UM18	07/06/92	S	2,4,6-Tribromophenol	70.00			100.000	70.000	UGL
		UM18	07/06/92	S	2-Fluorobiphenyl	74.00			50.000	37.000	UGL
		UM18	07/06/92	S	2-Fluorophenol	57.00			100.000	57.000	UGL
		UM18	07/06/92	S	Nitrobenzene-D5	68.00			50.000	34.000	UGL
		UM18	07/06/92	S	Phenol-D6	44.00			100.000	44.000	UGL
		UM18	07/06/92	S	Terphenyl-D14	90.00			50.000	45.000	UGL
ES	YJY	UM18	06/27/92	S	2,4,6-Tribromophenol	65.00			100.000	65.000	UGL
		UM18	06/27/92	S	2-Fluorobiphenyl	64.00			50.000	32.000	UGL
		UM18	06/27/92	S	2-Fluorophenol	65.00			100.000	65.000	UGL
		UM18	06/27/92	S	Nitrobenzene-D5	64.00			50.000	32.000	UGL
		UM18	06/27/92	S	Phenol-D6	58.00			100.000	58.000	UGL
		UM18	06/27/92	S	Terphenyl-D14	94.00			50.000	47.000	UGL
ES	YKU	J019	06/05/92	S	Arsenic	115.80			0.481	0.357	UGG
		J019	06/05/92	S	Arsenic	111.30			7.780	8.570	UGG
		J019	06/05/92	S	Arsenic	104.44			7.880	8.230	UGG
ES	YKV	J019	06/16/92	S	Arsenic	123.97			0.463	0.574	UGG
		J019	06/16/92	S	Arsenic	98.81			7.360	7.470	UGG
		J019	06/16/92	S	Arsenic	102.32			7.760	7.940	UGG
ES	YLS	UM18	06/16/92	S	2,4,6-Tribromophenol	91.04			6.780	6.180	UGG
		UM18	06/16/92	S	2-Fluorobiphenyl	93.94			3.380	3.180	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CGL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tecsis-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flag	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	YLS	LN18	06/16/92	S	2-Fluorophenol	83.58			6.700	5.600	UGG
		LN18	06/16/92	S	Nitrobenzene-05	84.85			3.300	2.800	UGG
		LN18	06/16/92	S	Phenol-06	88.06			6.700	5.900	UGG
		LN18	06/16/92	S	Terphenyl-D14	121.21			3.300	4.000	UGG
ES	YLU	LN18	06/22/92	S	2,4,6-Tribromophenol	76.12			6.700	5.100	UGG
		LN18	06/22/92	S	2-Fluorobiphenyl	78.79			3.300	2.400	UGG
		LN18	06/22/92	S	2-Fluorophenol	76.12			6.700	5.100	UGG
		LN18	06/22/92	S	Nitrobenzene-05	72.73			3.300	2.400	UGG
		LN18	06/22/92	S	Phenol-06	79.10			6.700	5.300	UGG
		LN18	06/22/92	S	Terphenyl-D14	106.06			3.300	3.300	UGG
ES	YLY	LN18	06/29/92	S	2,4,6-Tribromophenol	77.61			6.700	5.200	UGG
		LN18	06/29/92	S	2-Fluorobiphenyl	87.88			3.300	2.900	UGG
		LN18	06/29/92	S	2-Fluorophenol	76.12			6.700	5.100	UGG
		LN18	06/29/92	S	Nitrobenzene-05	73.76			3.300	2.500	UGG
		LN18	06/29/92	S	Phenol-06	76.12			6.700	5.100	UGG
		LN18	06/29/92	S	Terphenyl-D14	103.83			3.300	3.400	UGG
ES	YMO	UN20	05/11/92	S	1,2-Dichloroethane-04	96.80			50.000	48.000	UGL
		UN20	05/11/92	S	4-Bromofluorobenzene	100.00			50.000	50.000	UGL
		UN20	05/11/92	S	Toluene-08	98.80			50.000	49.000	UGL
ES	YMW	UN20	06/05/92	S	1,2-Dichloroethane-04	98.80			50.000	49.000	UGL
		UN20	06/05/92	S	4-Bromofluorobenzene	100.00			50.000	50.000	UGL
		UN20	06/05/92	S	Toluene-08	100.00			50.000	50.000	UGL
ES	YMY	UN20	06/12/92	S	1,2-Dichloroethane-04	100.00			50.000	50.000	UGL
		UN20	06/12/92	S	4-Bromofluorobenzene	102.00			50.000	51.000	UGL
		UN20	06/12/92	S	Toluene-08	100.00			50.000	50.000	UGL
ES	YMZ	UN20	06/18/92	S	1,2-Dichloroethane-04	96.00			50.000	48.000	UGL
		UN20	06/18/92	S	4-Bromofluorobenzene	100.00			50.000	50.000	UGL
		UN20	06/18/92	S	Toluene-08	100.00			50.000	50.000	UGL
ES	YOL	8810	05/18/92	S	Barium	117.80			10.000	11.700	UGL
		8810	05/18/92	S	Barium	98.48			3750.000	3690.000	UGL
		8810	05/18/92	S	Barium	97.48			7300.000	7320.000	UGL
		8810	05/18/92	S	Barium	99.07			7500.000	7430.000	UGL
		8810	05/18/92	S	Calcium	95.80			1800.000	950.000	UGL
		8810	05/18/92	S	Calcium	99.87			7500.000	7430.000	UGL
		8810	05/18/92	S	Calcium	98.67			15000.000	14800.000	UGL
		8810	05/18/92	S	Calcium	100.67			15000.000	15100.000	UGL
		8810	05/18/92	S	Cadmium	91.33			15.000	13.700	UGL
		8810	05/18/92	S	Cadmium	95.50			2000.000	1910.000	UGL
		8810	05/18/92	S	Cadmium	95.25			4000.000	3810.000	UGL
		8810	05/18/92	S	Cadmium	96.50			4000.000	3860.000	UGL
		8810	05/18/92	S	Cobalt	98.48			50.000	49.200	UGL
		8810	05/18/92	S	Cobalt	96.80			20000.000	19800.000	UGL
		8810	05/18/92	S	Cobalt	95.80			40000.000	38000.000	UGL
		8810	05/18/92	S	Cobalt	97.25			40000.000	38900.000	UGL
		8810	05/18/92	S	Chromium	115.80			10.000	11.500	UGL
		8810	05/18/92	S	Chromium	98.50			2000.000	1970.000	UGL

Notes for Data Flags: I = Results less than CRL but greater than CBL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tecela-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	YOL	SS10	05/18/92	S	Chromium	97.75			4000.000	3910.000	UGL
		SS10	05/18/92	S	Chromium	99.75			4000.000	3990.000	UGL
		SS10	05/18/92	S	Copper	106.00			20.000	21.200	UGL
		SS10	05/18/92	S	Copper	97.25			4000.000	3890.000	UGL
		SS10	05/18/92	S	Copper	96.50			8000.000	7720.000	UGL
		SS10	05/18/92	S	Copper	97.50			8000.000	7800.000	UGL
		SS10	05/18/92	S	Magnesium	103.00			1000.000	1030.000	UGL
		SS10	05/18/92	S	Magnesium	101.07			7500.000	7500.000	UGL
		SS10	05/18/92	S	Magnesium	100.00			15000.000	15000.000	UGL
		SS10	05/18/92	S	Magnesium	101.33			15000.000	15200.000	UGL
		SS10	05/18/92	S	Manganese	104.00			10.000	10.400	UGL
		SS10	05/18/92	S	Manganese	98.93			750.000	742.000	UGL
		SS10	05/18/92	S	Manganese	98.00			1500.000	1470.000	UGL
		SS10	05/18/92	S	Manganese	99.33			1500.000	1490.000	UGL
		SS10	05/18/92	S	Sodium	109.00			1000.000	1090.000	UGL
		SS10	05/18/92	S	Sodium	98.00			20000.000	19600.000	UGL
		SS10	05/18/92	S	Sodium	97.00			40000.000	38800.000	UGL
		SS10	05/18/92	S	Sodium	98.00			40000.000	39200.000	UGL
		SS10	05/18/92	S	Nickel	103.00			50.000	51.500	UGL
		SS10	05/18/92	S	Nickel	97.67			6000.000	5860.000	UGL
		SS10	05/18/92	S	Nickel	96.67			12000.000	11600.000	UGL
		SS10	05/18/92	S	Nickel	98.33			12000.000	11800.000	UGL
		SS10	05/18/92	S	Zinc	108.00			40.000	43.200	UGL
		SS10	05/18/92	S	Zinc	95.20			7500.000	7140.000	UGL
		SS10	05/18/92	S	Zinc	94.00			15000.000	14100.000	UGL
		SS10	05/18/92	S	Zinc	96.00			15000.000	14400.000	UGL
ES	YOR	SS10	06/17/92	S	Barium	102.00			10.000	10.200	UGL
		SS10	06/17/92	S	Barium	97.60			3750.000	3660.000	UGL
		SS10	06/17/92	S	Barium	98.00			7500.000	7350.000	UGL
		SS10	06/17/92	S	Barium	99.47			7500.000	7460.000	UGL
		SS10	06/17/92	S	Calcium	101.00			1000.000	1010.000	UGL
		SS10	06/17/92	S	Calcium	98.80			7500.000	7410.000	UGL
		SS10	06/17/92	S	Calcium	98.67			15000.000	14800.000	UGL
		SS10	06/17/92	S	Calcium	99.33			15000.000	14900.000	UGL
		SS10	06/17/92	S	Cadmium	103.33			15.000	15.500	UGL
		SS10	06/17/92	S	Cadmium	95.50			2000.000	1910.000	UGL
		SS10	06/17/92	S	Cadmium	96.00			4000.000	3840.000	UGL
		SS10	06/17/92	S	Cadmium	96.50			4000.000	3860.000	UGL
		SS10	06/17/92	S	Cobalt	101.40			50.000	50.700	UGL
		SS10	06/17/92	S	Cobalt	95.80			20000.000	19080.000	UGL
		SS10	06/17/92	S	Cobalt	94.75			40000.000	37900.000	UGL
		SS10	06/17/92	S	Cobalt	95.50			40000.000	38200.000	UGL
		SS10	06/17/92	S	Chromium	88.40			10.000	8.840	UGL
		SS10	06/17/92	S	Chromium	96.50			2000.000	1930.000	UGL
		SS10	06/17/92	S	Chromium	96.50			4000.000	3860.000	UGL
		SS10	06/17/92	S	Chromium	97.25			4000.000	3890.000	UGL
		SS10	06/17/92	S	Copper	104.50			20.000	20.900	UGL
		SS10	06/17/92	S	Copper	97.50			4000.000	3900.000	UGL
		SS10	06/17/92	S	Copper	97.88			8000.000	7830.000	UGL
		SS10	06/17/92	S	Copper	98.63			8000.000	7890.000	UGL
		SS10	06/17/92	S	Magnesium	102.00			1000.000	1020.000	UGL
		SS10	06/17/92	S	Magnesium	99.33			7500.000	7450.000	UGL

Notes for Data Flags: I = Results less than CML but greater than COB, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

## APPENDIX C-18

Tussock North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YGR	SS10	06/17/92	S	Magnesium	99.33			15000.000	14900.000	UGL
		SS10	06/17/92	S	Magnesium	99.33			15000.000	14900.000	UGL
		SS10	06/17/92	S	Manganese	106.00			10.000	10.600	UGL
		SS10	06/17/92	S	Manganese	97.07			750.000	728.000	UGL
		SS10	06/17/92	S	Manganese	97.33			1500.000	1460.000	UGL
		SS10	06/17/92	S	Manganese	97.33			1500.000	1460.000	UGL
		SS10	06/17/92	S	Sodium	105.00			1000.000	1050.000	UGL
		SS10	06/17/92	S	Sodium	97.50			20000.000	19500.000	UGL
		SS10	06/17/92	S	Sodium	98.00			40000.000	39200.000	UGL
		SS10	06/17/92	S	Sodium	98.50			40000.000	39400.000	UGL
		SS10	06/17/92	S	Nickel	95.00			50.000	47.500	UGL
		SS10	06/17/92	S	Nickel	95.00			6000.000	5700.000	UGL
		SS10	06/17/92	S	Nickel	95.00			12000.000	11400.000	UGL
		SS10	06/17/92	S	Nickel	95.83			12000.000	11500.000	UGL
		SS10	06/17/92	S	Zinc	105.00			40.000	41.200	UGL
		SS10	06/17/92	S	Zinc	94.95			7500.000	7120.000	UGL
		SS10	06/17/92	S	Zinc	94.67			15000.000	14200.000	UGL
		SS10	06/17/92	S	Zinc	94.67			15000.000	14200.000	UGL
ES	YCU	SS10	06/30/92	S	Barium	108.00			10.000	10.800	UGL
		SS10	06/30/92	S	Barium	97.33			3750.000	3650.000	UGL
		SS10	06/30/92	S	Barium	97.07			7500.000	7200.000	UGL
		SS10	06/30/92	S	Barium	98.95			7500.000	7420.000	UGL
		SS10	06/30/92	S	Calcium	98.00			1000.000	980.000	UGL
		SS10	06/30/92	S	Calcium	102.40			7500.000	7600.000	UGL
		SS10	06/30/92	S	Calcium	98.00			15000.000	14700.000	UGL
		SS10	06/30/92	S	Calcium	101.33			15000.000	15200.000	UGL
		SS10	06/30/92	S	Cadmium	89.33			15.000	13.400	UGL
		SS10	06/30/92	S	Cadmium	93.50			2000.000	1870.000	UGL
		SS10	06/30/92	S	Cadmium	94.50			4000.000	3700.000	UGL
		SS10	06/30/92	S	Cadmium	95.75			4000.000	3830.000	UGL
		SS10	06/30/92	S	Cobalt	91.40			50.000	45.700	UGL
		SS10	06/30/92	S	Cobalt	94.00			20000.000	18000.000	UGL
		SS10	06/30/92	S	Cobalt	94.75			40000.000	37900.000	UGL
		SS10	06/30/92	S	Cobalt	96.50			40000.000	38600.000	UGL
		SS10	06/30/92	S	Chromium	114.00			10.000	11.400	UGL
		SS10	06/30/92	S	Chromium	96.50			2000.000	1930.000	UGL
		SS10	06/30/92	S	Chromium	96.75			4000.000	3870.000	UGL
		SS10	06/30/92	S	Chromium	98.25			4000.000	3930.000	UGL
		SS10	06/30/92	S	Copper	95.50			20.000	19.100	UGL
		SS10	06/30/92	S	Copper	96.00			4000.000	3840.000	UGL
		SS10	06/30/92	S	Copper	96.25			8000.000	7700.000	UGL
		SS10	06/30/92	S	Copper	98.00			8000.000	7840.000	UGL
		SS10	06/30/92	S	Magnesium	94.20			1000.000	942.000	UGL
		SS10	06/30/92	S	Magnesium	97.33			7500.000	7300.000	UGL
		SS10	06/30/92	S	Magnesium	96.00			15000.000	14400.000	UGL
		SS10	06/30/92	S	Magnesium	98.00			15000.000	14700.000	UGL
		SS10	06/30/92	S	Manganese	99.10			10.000	9.910	UGL
		SS10	06/30/92	S	Manganese	93.20			750.000	714.000	UGL
		SS10	06/30/92	S	Manganese	95.33			1500.000	1430.000	UGL
		SS10	06/30/92	S	Manganese	97.33			1500.000	1460.000	UGL
		SS10	06/30/92	S	Sodium	99.00			1000.000	990.000	UGL
		SS10	06/30/92	S	Sodium	98.50			20000.000	19900.000	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than C09, 2 = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tosco-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YOU	SS10	06/30/92	S	Sodium	97.00			40000.000	38800.000	UGL
		SS10	06/30/92	S	Sodium	98.50			40000.000	39400.000	UGL
		SS10	06/30/92	S	Nickel	93.20			50.000	46.600	UGL
		SS10	06/30/92	S	Nickel	93.33			6000.000	5600.000	UGL
		SS10	06/30/92	S	Nickel	94.17			12000.000	11300.000	UGL
		SS10	06/30/92	S	Nickel	95.00			12000.000	11400.000	UGL
		SS10	06/30/92	S	Zinc	97.50			40.000	39.000	UGL
		SS10	06/30/92	S	Zinc	92.27			7500.000	6920.000	UGL
		SS10	06/30/92	S	Zinc	92.67			15000.000	13900.000	UGL
		SS10	06/30/92	S	Zinc	94.67			15000.000	14200.000	UGL
ES	YOU	SS10	07/10/92	S	Barium	128.00			10.000	12.000	UGL
		SS10	07/10/92	S	Barium	97.33			3750.000	3650.000	UGL
		SS10	07/10/92	S	Barium	98.13			7500.000	7360.000	UGL
		SS10	07/10/92	S	Barium	98.80			7500.000	7410.000	UGL
		SS10	07/10/92	S	Calcium	105.00			1000.000	1050.000	UGL
		SS10	07/10/92	S	Calcium	98.27			7500.000	7370.000	UGL
		SS10	07/10/92	S	Calcium	100.67			15000.000	15100.000	UGL
		SS10	07/10/92	S	Calcium	102.67			15000.000	15400.000	UGL
		SS10	07/10/92	S	Cadmium	94.67			15.000	14.200	UGL
		SS10	07/10/92	S	Cadmium	95.00			2000.000	1900.000	UGL
		SS10	07/10/92	S	Cadmium	98.50			4000.000	3940.000	UGL
		SS10	07/10/92	S	Cadmium	98.75			4000.000	3930.000	UGL
		SS10	07/10/92	S	Cobalt	101.60			50.000	50.800	UGL
		SS10	07/10/92	S	Cobalt	96.50			20000.000	19300.000	UGL
		SS10	07/10/92	S	Cobalt	97.50			40000.000	39000.000	UGL
		SS10	07/10/92	S	Cobalt	98.25			40000.000	39300.000	UGL
		SS10	07/10/92	S	Chromium	114.00			10.000	11.400	UGL
		SS10	07/10/92	S	Chromium	99.00			2000.000	1980.000	UGL
		SS10	07/10/92	S	Chromium	99.75			4000.000	3990.000	UGL
		SS10	07/10/92	S	Chromium	100.50			4000.000	4020.000	UGL
		SS10	07/10/92	S	Copper	98.00			20.000	19.600	UGL
		SS10	07/10/92	S	Copper	99.00			4000.000	3960.000	UGL
		SS10	07/10/92	S	Copper	100.75			8000.000	8060.000	UGL
		SS10	07/10/92	S	Copper	101.13			8000.000	8090.000	UGL
		SS10	07/10/92	S	Magnesium	98.00			1000.000	980.000	UGL
		SS10	07/10/92	S	Magnesium	98.93			7500.000	7420.000	UGL
		SS10	07/10/92	S	Magnesium	100.67			15000.000	15100.000	UGL
		SS10	07/10/92	S	Magnesium	101.33			15000.000	15200.000	UGL
		SS10	07/10/92	S	Manganese	97.30			10.000	9.730	UGL
		SS10	07/10/92	S	Manganese	97.60			750.000	732.000	UGL
		SS10	07/10/92	S	Manganese	98.67			1500.000	1480.000	UGL
		SS10	07/10/92	S	Manganese	99.33			1500.000	1490.000	UGL
		SS10	07/10/92	S	Sodium	103.00			1000.000	1030.000	UGL
		SS10	07/10/92	S	Sodium	100.00			20000.000	20000.000	UGL
		SS10	07/10/92	S	Sodium	101.25			40000.000	40300.000	UGL
		SS10	07/10/92	S	Sodium	102.00			40000.000	40800.000	UGL
		SS10	07/10/92	S	Nickel	96.60			50.000	48.300	UGL
		SS10	07/10/92	S	Nickel	97.00			6000.000	5800.000	UGL
		SS10	07/10/92	S	Nickel	98.33			12000.000	11800.000	UGL
		SS10	07/10/92	S	Nickel	99.17			12000.000	11900.000	UGL
		SS10	07/10/92	S	Zinc	106.25			40.000	42.500	UGL
		SS10	07/10/92	S	Zinc	94.27			7500.000	7070.000	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than C02, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

APPENDIX C-10

Tecale-March Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Conc.	Recovered Conc.	Units
ES	YOM	SS10	07/10/92	S	Zinc	97.33			15000.000	14600.000	UGL
		SS10	07/10/92	S	Zinc	97.33			15000.000	14600.000	UGL
ES	YPR	LN10	07/05/92	S	alpha-Endosulfan / Endosulfan I	90.00			0.020	0.018	UGS
		LN10	07/05/92	S	Aldrin	40.00			0.020	0.008	UGS
		LN10	07/05/92	S	beta-Endosulfan / Endosulfan II	95.00			0.020	0.019	UGS
		LN10	07/05/92	S	Dieldrin	95.00			0.020	0.019	UGS
		LN10	07/05/92	S	Endrin	105.00			0.020	0.021	UGS
		LN10	07/05/92	S	Heptachlor	95.00			0.020	0.019	UGS
		LN10	07/05/92	S	Isoctrin	80.00			0.020	0.024	UGS
		LN10	07/05/92	S	Lindane / gamma-Benzenehexachloride	85.00			0.020	0.017	UGS
		LN10	07/05/92	S	Nonachlor	126.30	X		0.200	0.253	UGS
		LN10	07/05/92	S	p,p-DDT	130.00			0.020	0.026	UGS
ES	YPS	LN10	07/05/92	S	alpha-Endosulfan / Endosulfan I	100.00			0.020	0.020	UGS
		LN10	07/05/92	S	Aldrin	100.00			0.020	0.020	UGS
		LN10	07/05/92	S	beta-Endosulfan / Endosulfan II	100.00			0.020	0.020	UGS
		LN10	07/05/92	S	Dieldrin	105.00			0.020	0.021	UGS
		LN10	07/05/92	S	Endrin	45.00			0.020	0.009	UGS
		LN10	07/05/92	S	Heptachlor	105.00			0.020	0.021	UGS
		LN10	07/05/92	S	Isoctrin	100.00			0.020	0.020	UGS
		LN10	07/05/92	S	Lindane / gamma-Benzenehexachloride	100.00			0.020	0.020	UGS
		LN10	07/05/92	S	Nonachlor	100.50			0.200	0.201	UGS
		LN10	07/05/92	S	p,p-DDT	110.00			0.020	0.022	UGS
ES	YPT	LN10	07/01/92	S	alpha-Endosulfan / Endosulfan I	80.00			0.020	0.016	UGS
		LN10	07/01/92	S	alpha-Endosulfan / Endosulfan I	95.00			0.020	0.019	UGS
		LN10	07/01/92	S	Aldrin	85.00			0.020	0.017	UGS
		LN10	07/01/92	S	Aldrin	95.00			0.020	0.019	UGS
		LN10	07/01/92	S	beta-Endosulfan / Endosulfan II	85.00			0.020	0.017	UGS
		LN10	07/01/92	S	beta-Endosulfan / Endosulfan II	100.00			0.020	0.020	UGS
		LN10	07/01/92	S	Dieldrin	80.00			0.020	0.016	UGS
		LN10	07/01/92	S	Dieldrin	95.00			0.020	0.019	UGS
		LN10	07/01/92	S	Endrin	80.00			0.020	0.016	UGS
		LN10	07/01/92	S	Endrin	90.00			0.020	0.018	UGS
		LN10	07/01/92	S	Heptachlor	90.00			0.020	0.018	UGS
		LN10	07/01/92	S	Heptachlor	100.00			0.020	0.020	UGS
		LN10	07/01/92	S	Isoctrin	70.67			0.020	0.023	UGS
		LN10	07/01/92	S	Isoctrin	90.00			0.020	0.027	UGS
		LN10	07/01/92	S	Lindane / gamma-Benzenehexachloride	80.00			0.020	0.016	UGS
		LN10	07/01/92	S	Lindane / gamma-Benzenehexachloride	90.00			0.020	0.018	UGS
		LN10	07/01/92	S	Nonachlor	84.00			0.200	0.168	UGS
		LN10	07/01/92	S	Nonachlor	95.00			0.200	0.190	UGS
		LN10	07/01/92	S	p,p-DDT	90.00			0.020	0.018	UGS
		LN10	07/01/92	S	p,p-DDT	105.00			0.020	0.021	UGS
ES	YPU	99	07/16/92	S	alpha-Endosulfan / Endosulfan I	-999.00			0.020	0.026	UGS
		99	07/16/92	S	Aldrin	-999.00			0.020	0.027	UGS
		99	07/16/92	S	beta-Endosulfan / Endosulfan II	-999.00			0.020	0.027	UGS
		99	07/16/92	S	Dieldrin	-999.00			0.020	0.026	UGS
		99	07/16/92	S	Endrin	-999.00			0.020	0.027	UGS
		99	07/16/92	S	Heptachlor	-999.00			0.020	0.027	UGS
		99	07/16/92	S	Isoctrin	-999.00			0.020	0.027	UGS

Notes for Data Flags: 1 = Results less than GLL but greater than GBL, 2 = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits



Tecopa-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	YPU	99	07/16/92	S	Lindane / gamma-Benzenohexachloride	-999.00			0.020	0.006	UGG
		99	07/16/92	S	Methoxychlor	-999.00			0.200	0.071	UGG
		99	07/16/92	S	p,p-DDT	-999.00			0.020	0.007	UGG
ES	YPZ	LN10	07/27/92	S	alpha-Endosulfan / Endosulfan I	20.00			0.020	0.004	UGG
		LN10	07/26/92	S	alpha-Endosulfan / Endosulfan I	95.00			0.020	0.019	UGG
		LN10	07/26/92	S	alpha-Endosulfan / Endosulfan I	100.00			0.020	0.020	UGG
		LN10	07/26/92	S	Aldrin	90.00			0.020	0.018	UGG
		LN10	07/26/92	S	Aldrin	95.00			0.020	0.019	UGG
		LN10	07/27/92	S	Aldrin	100.00			0.020	0.020	UGG
		LN10	07/26/92	S	beta-Endosulfan / Endosulfan II	85.00			0.020	0.017	UGG
		LN10	07/26/92	S	beta-Endosulfan / Endosulfan II	95.00			0.020	0.019	UGG
		LN10	07/27/92	S	beta-Endosulfan / Endosulfan II	95.00			0.020	0.019	UGG
		LN10	07/26/92	S	Dieldrin	100.00			0.020	0.020	UGG
		LN10	07/26/92	S	Dieldrin	105.00			0.020	0.021	UGG
		LN10	07/26/92	S	Endrin	95.00			0.020	0.019	UGG
		LN10	07/26/92	S	Endrin	105.00			0.020	0.021	UGG
		LN10	07/27/92	S	Heptachlor	85.00			0.020	0.017	UGG
		LN10	07/26/92	S	Heptachlor	90.00			0.020	0.018	UGG
		LN10	07/26/92	S	Heptachlor	95.00			0.020	0.019	UGG
		LN10	07/27/92	S	Isodrin	63.33			0.030	0.019	UGG
		LN10	07/26/92	S	Isodrin	83.33			0.030	0.025	UGG
		LN10	07/26/92	S	Isodrin	86.67			0.030	0.026	UGG
		LN10	07/26/92	S	Lindane / gamma-Benzenohexachloride	85.00			0.020	0.017	UGG
		LN10	07/26/92	S	Lindane / gamma-Benzenohexachloride	90.00			0.020	0.018	UGG
		LN10	07/27/92	S	Lindane / gamma-Benzenohexachloride	120.00			0.020	0.024	UGG
		LN10	07/26/92	S	Methoxychlor	100.50			0.200	0.201	UGG
		LN10	07/26/92	S	Methoxychlor	111.50			0.200	0.223	UGG
		LN10	07/26/92	S	p,p-DDT	115.00			0.020	0.023	UGG
		LN10	07/27/92	S	p,p-DDT	125.00			0.020	0.025	UGG
		LN10	07/26/92	S	p,p-DDT	165.00			0.020	0.033	UGG
ES	YQL	JD15	06/16/92	S	Selenium	101.56			0.577	0.586	UGG
		JD15	06/16/92	S	Selenium	90.58			7.220	6.540	UGG
		JD15	06/16/92	S	Selenium	88.36			7.390	6.530	UGG
ES	YQM	JD15	06/15/92	S	Selenium	116.55			0.556	0.648	UGG
		JD15	06/15/92	S	Selenium	101.97			7.090	7.230	UGG
		JD15	06/15/92	S	Selenium	101.10			7.270	7.330	UGG
ES	YQT	JD15	07/11/92	S	Selenium	107.86			0.496	0.535	UGG
		JD15	07/11/92	S	Selenium	93.38			7.790	7.430	UGG
		JD15	07/11/92	S	Selenium	93.83			7.940	7.450	UGG
ES	YQU	JD15	07/15/92	S	Selenium	89.98			0.489	0.440	UGG
		JD15	07/15/92	S	Selenium	94.67			7.510	7.110	UGG
		JD15	07/15/92	S	Selenium	98.97			7.790	7.710	UGG
ES	YQV	JD15	07/14/92	S	Selenium	115.93			0.496	0.575	UGG
		JD15	07/14/92	S	Selenium	98.82			7.630	7.330	UGG
		JD15	07/14/92	S	Selenium	93.19			7.700	7.330	UGG
ES	YQW	JD15	07/14/92	S	Selenium	182.89			0.479	0.489	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than COB, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Toxic-Worth Stage I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Conc.	Recovered Conc.	Units
ES	Y0V	JD15	07/14/92	S	Selenium	89.41			7.700	6.900	UGG
		JD15	07/14/92	S	Selenium	90.95			7.830	7.120	UGG
ES	Y0Z	JD15	07/14/92	S	Selenium	107.89			0.449	0.506	UGG
		JD15	07/14/92	S	Selenium	90.89			7.790	7.080	UGG
		JD15	07/14/92	S	Selenium	101.82			7.840	7.920	UGG
ES	Y0J	UN13	05/20/92	S	alpha-Endosulfan / Endosulfan I	96.80			0.500	0.480	UGL
		UN13	05/20/92	S	Aldrin	71.40			0.500	0.357	UGL
		UN13	05/20/92	S	beta-Endosulfan / Endosulfan II	92.40			0.500	0.462	UGL
		UN13	05/20/92	S	Dieldrin	96.80			0.500	0.484	UGL
		UN13	05/20/92	S	Endrin	91.40			0.500	0.457	UGL
		UN13	05/20/92	S	Heptachlor	81.00			0.500	0.405	UGL
		UN13	05/20/92	S	Isodrin	76.00			1.000	0.740	UGL
		UN13	05/20/92	S	Lindane / gamma-Benzenehexachloride	76.20			0.500	0.381	UGL
		UN13	05/20/92	S	Methoxychlor	114.80			1.000	1.140	UGL
		UN13	05/20/92	S	p,p-DDT	92.40			0.500	0.463	UGL
ES	Y0P	UN13	07/01/92	S	alpha-Endosulfan / Endosulfan I	98.80			0.500	0.494	UGL
		UN13	07/01/92	S	Aldrin	70.80			0.500	0.350	UGL
		UN13	07/01/92	S	beta-Endosulfan / Endosulfan II	89.80			0.500	0.449	UGL
		UN13	07/01/92	S	Dieldrin	98.80			0.500	0.490	UGL
		UN13	07/01/92	S	Endrin	98.40			0.500	0.492	UGL
		UN13	07/01/92	S	Heptachlor	81.20			0.500	0.406	UGL
		UN13	07/01/92	S	Isodrin	72.90			1.000	0.729	UGL
		UN13	07/01/92	S	Lindane / gamma-Benzenehexachloride	98.80			0.500	0.450	UGL
		UN13	07/01/92	S	Methoxychlor	102.00			1.000	1.020	UGL
		UN13	07/01/92	S	p,p-DDT	102.80			0.500	0.514	UGL
ES	Y0U	UN13	07/31/92	S	alpha-Endosulfan / Endosulfan I	106.20			0.500	0.531	UGL
		UN13	07/31/92	S	Aldrin	70.20			0.500	0.351	UGL
		UN13	07/31/92	S	beta-Endosulfan / Endosulfan II	96.40			0.500	0.462	UGL
		UN13	07/31/92	S	Dieldrin	104.80			0.500	0.524	UGL
		UN13	07/31/92	S	Endrin	105.20			0.500	0.526	UGL
		UN13	07/31/92	S	Heptachlor	83.20			0.500	0.416	UGL
		UN13	07/31/92	S	Isodrin	75.00			1.000	0.750	UGL
		UN13	07/31/92	S	Lindane / gamma-Benzenehexachloride	98.60			0.500	0.493	UGL
		UN13	07/31/92	S	Methoxychlor	99.90			1.000	0.999	UGL
		UN13	07/31/92	S	p,p-DDT	99.20			0.500	0.496	UGL
ES	Y0N	LN19	06/06/92	S	1,2-Dichloroethane-04	96.80			0.050	0.048	UGG
		LN19	06/06/92	S	4-Bromofluorobenzene	100.80			0.050	0.050	UGG
		LN19	06/06/92	S	Toluene-08	98.80			0.050	0.049	UGG
ES	Y0M	LN19	06/11/92	S	1,2-Dichloroethane-04	92.80			0.050	0.044	UGG
		LN19	06/11/92	S	4-Bromofluorobenzene	90.80			0.050	0.045	UGG
		LN19	06/11/92	S	Toluene-08	90.80			0.050	0.045	UGG
ES	Y0T	LN19	06/22/92	S	1,2-Dichloroethane-04	106.80			0.050	0.053	UGG
		LN19	06/22/92	S	4-Bromofluorobenzene	104.80			0.050	0.052	UGG
		LN19	06/22/92	S	Toluene-08	108.80			0.050	0.054	UGG
ES	Y0V	LN19	06/23/92	S	1,2-Dichloroethane-04	98.80			0.050	0.048	UGG

Notes for Data Flags: 1 = Results less than CML but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	YSV	LN19	06/23/92	S	4-Bromofluorobenzene	90.00			0.050	0.045	UGG
		LN19	06/23/92	S	Toluene-D8	92.00			0.050	0.046	UGG
ES	YSW	LN19	06/23/92	S	1,2-Dichloroethane-D4	98.00			0.050	0.049	UGG
		LN19	06/23/92	S	4-Bromofluorobenzene	100.00			0.050	0.050	UGG
		LN19	06/23/92	S	Toluene-D8	100.00			0.050	0.050	UGG
ES	YSX	LN19	06/24/92	S	1,2-Dichloroethane-D4	96.00			0.050	0.048	UGG
		LN19	06/24/92	S	4-Bromofluorobenzene	104.00			0.050	0.052	UGG
		LN19	06/24/92	S	Toluene-D8	100.00			0.050	0.050	UGG
ES	YSY	LN19	06/24/92	S	1,2-Dichloroethane-D4	100.00			0.050	0.050	UGG
		LN19	06/24/92	S	4-Bromofluorobenzene	102.00			0.050	0.051	UGG
		LN19	06/24/92	S	Toluene-D8	98.00			0.050	0.049	UGG
ES	YSZ	LN19	06/25/92	S	1,2-Dichloroethane-D4	98.00			0.050	0.049	UGG
		LN19	06/25/92	S	4-Bromofluorobenzene	100.00			0.050	0.050	UGG
		LN19	06/25/92	S	Toluene-D8	102.00			0.050	0.051	UGG
ES	YVE	S801	05/19/92	S	Mercury	102.00			0.500	0.510	UGL
		S801	05/19/92	S	Mercury	95.60			2.500	2.390	UGL
		S801	05/19/92	S	Mercury	96.80			2.500	2.420	UGL
ES	YVJ	S801	06/17/92	S	Mercury	105.60			0.500	0.528	UGL
		S801	06/17/92	S	Mercury	84.00			2.500	2.100	UGL
		S801	06/17/92	S	Mercury	94.00			2.500	2.350	UGL
ES	YVM	S801	07/07/92	S	Mercury	98.60			0.500	0.493	UGL
		S801	07/07/92	S	Mercury	100.40			2.500	2.510	UGL
		S801	07/07/92	S	Mercury	101.20			2.500	2.530	UGL
ES	YVP	S801	07/15/92	S	Mercury	99.20			0.500	0.496	UGL
		S801	07/15/92	S	Mercury	94.40			2.500	2.360	UGL
		S801	07/15/92	S	Mercury	96.80			2.500	2.420	UGL
ES	YVT	S801	07/31/92	S	Mercury	111.20			0.500	0.556	UGL
		S801	07/31/92	S	Mercury	106.00			2.500	2.650	UGL
		S801	07/31/92	S	Mercury	108.80			2.500	2.720	UGL
ES	YVX	S801	08/05/92	S	Mercury	99.40			0.500	0.497	UGL
		S801	08/05/92	S	Mercury	102.40			2.500	2.560	UGL
		S801	08/05/92	S	Mercury	105.60			2.500	2.640	UGL
ES	YXE	UAS2	05/27/92	S	1,3,5-Trinitrobenzene	63.60			0.912	0.580	UGL
		UAS2	05/27/92	S	1,3,5-Trinitrobenzene	67.54			9.120	6.160	UGL
		UAS2	05/27/92	S	1,3,5-Trinitrobenzene	70.98			9.120	6.400	UGL
		UAS2	05/27/92	S	1,3,5-Trinitrobenzene	87.95			47.400	41.500	UGL
		UAS2	05/27/92	S	2,4,6-Trinitrotoluene	85.12			1.210	1.030	UGL
		UAS2	05/27/92	S	2,4,6-Trinitrotoluene	66.78			12.100	8.080	UGL
		UAS2	05/27/92	S	2,4,6-Trinitrotoluene	71.49			12.100	8.680	UGL
		UAS2	05/27/92	S	2,4,6-Trinitrotoluene	84.70			88.900	75.300	UGL
		UAS2	05/27/92	S	2,4-Dinitrotoluene	77.39			0.115	0.089	UGL
		UAS2	05/27/92	S	2,4-Dinitrotoluene	78.00			1.190	0.897	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Yocco-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	YKE	UAS2	05/27/92	S	2,4-Dinitrotoluene	83.83			1.150	0.964	UGL
		UAS2	05/27/92	S	2,4-Dinitrotoluene	81.82			17.600	14.400	UGL
		UAS2	05/27/92	S	2-Nitrotoluene (TIC)	90.37			97.600	88.200	UGL
		UAS2	05/27/92	S	Nitrobenzene	75.92			1.200	0.911	UGL
		UAS2	05/27/92	S	Nitrobenzene	77.50			12.000	9.300	UGL
		UAS2	05/27/92	S	Nitrobenzene	84.17			12.000	10.100	UGL
		UAS2	05/27/92	S	Nitrobenzene	80.30			100.000	80.300	UGL
		UAS2	05/27/92	S	Cyclonite (RDX)	76.18			2.440	1.810	UGL
		UAS2	05/27/92	S	Cyclonite (RDX)	81.97			24.400	20.000	UGL
		UAS2	05/27/92	S	Cyclonite (RDX)	84.84			24.400	20.700	UGL
		UAS2	05/27/92	S	Cyclonite (RDX)	86.14			93.800	80.800	UGL
ES	YXK	UAS2	06/23/92	S	1,3,5-Trinitrobenzene	79.39			0.912	0.724	UGL
		UAS2	06/23/92	S	1,3,5-Trinitrobenzene	77.43			9.120	7.080	UGL
		UAS2	06/23/92	S	1,3,5-Trinitrobenzene	79.82			9.120	7.280	UGL
		UAS2	06/23/92	S	1,3,5-Trinitrobenzene	82.49			47.400	39.100	UGL
		UAS2	06/23/92	S	2,4,6-Trinitrotoluene	86.78			1.210	1.050	UGL
		UAS2	06/23/92	S	2,4,6-Trinitrotoluene	78.69			12.100	9.280	UGL
		UAS2	06/23/92	S	2,4,6-Trinitrotoluene	78.18			12.100	9.460	UGL
		UAS2	06/23/92	S	2,4,6-Trinitrotoluene	76.24			88.900	66.000	UGL
		UAS2	06/23/92	S	2,4-Dinitrotoluene	77.39			0.115	0.089	UGL
		UAS2	06/23/92	S	2,4-Dinitrotoluene	87.83			1.150	1.010	UGL
		UAS2	06/23/92	S	2,4-Dinitrotoluene	90.43			1.150	1.040	UGL
		UAS2	06/23/92	S	2,4-Dinitrotoluene	84.09			17.600	14.800	UGL
		UAS2	06/23/92	S	2-Nitrotoluene (TIC)	64.89			0.674	0.432	UGL
		UAS2	06/23/92	S	2-Nitrotoluene (TIC)	78.49			6.740	5.290	UGL
		UAS2	06/23/92	S	2-Nitrotoluene (TIC)	81.45			6.740	5.490	UGL
		UAS2	06/23/92	S	2-Nitrotoluene (TIC)	85.35			101.000	86.200	UGL
		UAS2	06/23/92	S	3,4-Dinitrotoluene	-999.00	R		4.940	0.500	UGL
		UAS2	06/23/92	S	Nitrobenzene	77.75			1.200	0.933	UGL
		UAS2	06/23/92	S	Nitrobenzene	75.00			12.000	9.000	UGL
		UAS2	06/23/92	S	Nitrobenzene	76.58			12.000	9.190	UGL
		UAS2	06/23/92	S	Nitrobenzene	78.20			100.000	78.200	UGL
		UAS2	06/23/92	S	Cyclonite (RDX)	86.48			2.440	2.110	UGL
		UAS2	06/23/92	S	Cyclonite (RDX)	83.61			24.400	20.400	UGL
		UAS2	06/23/92	S	Cyclonite (RDX)	86.48			24.400	21.100	UGL
		UAS2	06/23/92	S	Cyclonite (RDX)	87.10			93.800	81.700	UGL
ES	YXN	UAS2	06/29/92	S	1,3,5-Trinitrobenzene	83.88			0.912	0.765	UGL
		UAS2	06/29/92	S	1,3,5-Trinitrobenzene	75.77			9.120	6.910	UGL
		UAS2	06/29/92	S	1,3,5-Trinitrobenzene	80.92			9.120	7.380	UGL
		UAS2	06/29/92	S	1,3,5-Trinitrobenzene	84.40			47.400	40.100	UGL
		UAS2	06/29/92	S	2,4,6-Trinitrotoluene	110.74			1.210	1.340	UGL
		UAS2	06/29/92	S	2,4,6-Trinitrotoluene	81.07			12.100	9.810	UGL
		UAS2	06/29/92	S	2,4,6-Trinitrotoluene	84.30			12.100	10.280	UGL
		UAS2	06/29/92	S	2,4,6-Trinitrotoluene	78.52			88.900	69.800	UGL
		UAS2	06/29/92	S	2,4-Dinitrotoluene	91.38			0.115	0.105	UGL
		UAS2	06/29/92	S	2,4-Dinitrotoluene	94.78			1.150	1.090	UGL
		UAS2	06/29/92	S	2,4-Dinitrotoluene	100.00			1.150	1.150	UGL
		UAS2	06/29/92	S	2,4-Dinitrotoluene	86.95			17.600	15.300	UGL
		UAS2	06/29/92	S	2-Nitrotoluene (TIC)	109.79			0.674	0.740	UGL
		UAS2	06/29/92	S	2-Nitrotoluene (TIC)	83.38			6.740	5.430	UGL
		UAS2	06/29/92	S	2-Nitrotoluene (TIC)	90.34			6.740	6.090	UGL

Notes for Data Flags: 1 = Results less than CML but greater than CBL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	YXN	UAS2	06/29/92	S	2-Nitrotoluene (TIC)	93.56			101.000	94.500	UGL
		UAS2	06/29/92	S	Nitrobenzene	87.50			1.200	1.050	UGL
		UAS2	06/29/92	S	Nitrobenzene	76.56			12.000	9.180	UGL
		UAS2	06/29/92	S	Nitrobenzene	83.33			12.000	10.000	UGL
		UAS2	06/29/92	S	Nitrobenzene	83.40			100.000	83.400	UGL
		UAS2	06/29/92	S	Cyclonite (RDX)	85.66			2.440	2.090	UGL
		UAS2	06/29/92	S	Cyclonite (RDX)	83.80			24.400	20.300	UGL
		UAS2	06/29/92	S	Cyclonite (RDX)	86.89			24.400	21.200	UGL
		UAS2	06/29/92	S	Cyclonite (RDX)	88.49			93.800	83.000	UGL
ES	YXN	UAS2	06/19/92	S	1,3,5-Trinitrobenzene	82.13			0.912	0.749	UGL
		UAS2	06/19/92	S	1,3,5-Trinitrobenzene	78.18			9.120	7.130	UGL
		UAS2	06/19/92	S	1,3,5-Trinitrobenzene	78.84			9.120	7.190	UGL
		UAS2	06/19/92	S	1,3,5-Trinitrobenzene	83.76			47.400	39.700	UGL
		UAS2	06/19/92	S	2,4,6-Trinitrotoluene	109.92			1.210	1.330	UGL
		UAS2	06/19/92	S	2,4,6-Trinitrotoluene	85.95			12.100	10.400	UGL
		UAS2	06/19/92	S	2,4,6-Trinitrotoluene	88.43			12.100	10.700	UGL
		UAS2	06/19/92	S	2,4,6-Trinitrotoluene	80.54			88.900	71.600	UGL
		UAS2	06/19/92	S	2,4-Dinitrotoluene	81.74			0.115	0.094	UGL
		UAS2	06/19/92	S	2,4-Dinitrotoluene	100.87			1.150	1.160	UGL
		UAS2	06/19/92	S	2,4-Dinitrotoluene	101.74			1.150	1.170	UGL
		UAS2	06/19/92	S	2,4-Dinitrotoluene	90.91			17.600	16.000	UGL
		UAS2	06/19/92	S	2-Nitrotoluene (TIC)	86.05			0.674	0.580	UGL
		UAS2	06/19/92	S	2-Nitrotoluene (TIC)	94.66			6.740	6.380	UGL
		UAS2	06/19/92	S	2-Nitrotoluene (TIC)	97.03			6.740	6.540	UGL
		UAS2	06/19/92	S	2-Nitrotoluene (TIC)	89.31			101.000	90.200	UGL
		UAS2	06/19/92	S	Nitrobenzene	92.50			1.200	1.110	UGL
		UAS2	06/19/92	S	Nitrobenzene	85.83			12.000	10.300	UGL
		UAS2	06/19/92	S	Nitrobenzene	89.17			12.000	10.700	UGL
		UAS2	06/19/92	S	Nitrobenzene	81.90			100.000	81.900	UGL
		UAS2	06/19/92	S	Cyclonite (RDX)	84.43			2.440	2.060	UGL
		UAS2	06/19/92	S	Cyclonite (RDX)	86.48			24.400	21.100	UGL
		UAS2	06/19/92	S	Cyclonite (RDX)	86.48			24.400	21.100	UGL
		UAS2	06/19/92	S	Cyclonite (RDX)	88.81			93.800	83.300	UGL
ES	YXO	UAS2	06/30/92	S	1,3,5-Trinitrobenzene	93.53			0.912	0.853	UGL
		UAS2	06/30/92	S	1,3,5-Trinitrobenzene	83.33			9.120	7.600	UGL
		UAS2	06/30/92	S	1,3,5-Trinitrobenzene	83.33			9.120	7.600	UGL
		UAS2	06/30/92	S	1,3,5-Trinitrobenzene	82.70			47.400	39.200	UGL
		UAS2	06/30/92	S	2,4,6-Trinitrotoluene	112.40			1.210	1.360	UGL
		UAS2	06/30/92	S	2,4,6-Trinitrotoluene	84.30			12.100	10.200	UGL
		UAS2	06/30/92	S	2,4,6-Trinitrotoluene	85.95			12.100	10.400	UGL
		UAS2	06/30/92	S	2,4,6-Trinitrotoluene	75.82			88.900	67.400	UGL
		UAS2	06/30/92	S	2,4-Dinitrotoluene	84.35			0.115	0.097	UGL
		UAS2	06/30/92	S	2,4-Dinitrotoluene	99.13			1.150	1.140	UGL
		UAS2	06/30/92	S	2,4-Dinitrotoluene	99.13			1.150	1.140	UGL
		UAS2	06/30/92	S	2,4-Dinitrotoluene	84.66			17.600	14.900	UGL
		UAS2	06/30/92	S	2-Nitrotoluene (TIC)	83.23			0.674	0.561	UGL
		UAS2	06/30/92	S	2-Nitrotoluene (TIC)	88.13			6.740	5.940	UGL
		UAS2	06/30/92	S	2-Nitrotoluene (TIC)	91.39			6.740	6.160	UGL
		UAS2	06/30/92	S	2-Nitrotoluene (TIC)	81.88			101.000	82.700	UGL
		UAS2	06/30/92	S	Nitrobenzene	92.50			1.200	1.110	UGL
		UAS2	06/30/92	S	Nitrobenzene	82.42			12.000	9.890	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than COO, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Yocole-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	YXO	UAS2	06/30/92	S	Nitrobenzene	86.67			12.000	10.400	UGL
		UAS2	06/30/92	S	Nitrobenzene	74.50			100.000	74.500	UGL
		UAS2	06/30/92	S	Cyclonite (RDX)	100.41			2.440	2.450	UGL
		UAS2	06/30/92	S	Cyclonite (RDX)	91.39			24.400	22.300	UGL
		UAS2	06/30/92	S	Cyclonite (RDX)	91.80			24.400	22.400	UGL
		UAS2	06/30/92	S	Cyclonite (RDX)	87.21			93.800	81.800	UGL
ES	YXP	UAS2	07/01/92	S	1,3,5-Trinitrobenzene	91.45			0.912	0.834	UGL
		UAS2	07/01/92	S	1,3,5-Trinitrobenzene	80.15			9.120	7.310	UGL
		UAS2	07/01/92	S	1,3,5-Trinitrobenzene	80.48			9.120	7.340	UGL
		UAS2	07/01/92	S	1,3,5-Trinitrobenzene	82.70			47.400	39.200	UGL
		UAS2	07/01/92	S	2,4,6-Trinitrotoluene	120.66			1.210	1.460	UGL
		UAS2	07/01/92	S	2,4,6-Trinitrotoluene	83.47			12.100	10.100	UGL
		UAS2	07/01/92	S	2,4,6-Trinitrotoluene	85.12			12.100	10.300	UGL
		UAS2	07/01/92	S	2,4,6-Trinitrotoluene	79.87			88.900	71.000	UGL
		UAS2	07/01/92	S	2,4-Dinitrotoluene	89.57			0.115	0.103	UGL
		UAS2	07/01/92	S	2,4-Dinitrotoluene	96.52			1.150	1.110	UGL
		UAS2	07/01/92	S	2,4-Dinitrotoluene	98.26			1.150	1.130	UGL
		UAS2	07/01/92	S	2,4-Dinitrotoluene	89.77			17.600	15.800	UGL
		UAS2	07/01/92	S	2-Nitrotoluene (TIC)	87.98			0.674	0.593	UGL
		UAS2	07/01/92	S	2-Nitrotoluene (TIC)	79.82			6.740	5.380	UGL
		UAS2	07/01/92	S	2-Nitrotoluene (TIC)	83.89			6.740	5.600	UGL
		UAS2	07/01/92	S	2-Nitrotoluene (TIC)	87.72			101.000	88.600	UGL
		UAS2	07/01/92	S	Nitrobenzene	90.83			1.200	1.090	UGL
		UAS2	07/01/92	S	Nitrobenzene	80.67			12.000	9.680	UGL
		UAS2	07/01/92	S	Nitrobenzene	81.67			12.000	9.800	UGL
		UAS2	07/01/92	S	Nitrobenzene	77.70			100.000	77.700	UGL
		UAS2	07/01/92	S	Cyclonite (RDX)	93.44			2.440	2.280	UGL
		UAS2	07/01/92	S	Cyclonite (RDX)	88.52			24.400	21.600	UGL
		UAS2	07/01/92	S	Cyclonite (RDX)	89.34			24.400	21.800	UGL
		UAS2	07/01/92	S	Cyclonite (RDX)	85.07			93.800	79.800	UGL
ES	YXS	UAS2	07/07/92	S	1,3,5-Trinitrobenzene	81.42			0.958	0.780	UGL
		UAS2	07/07/92	S	1,3,5-Trinitrobenzene	77.24			9.580	7.400	UGL
		UAS2	07/07/92	S	1,3,5-Trinitrobenzene	83.40			9.580	7.990	UGL
		UAS2	07/07/92	S	1,3,5-Trinitrobenzene	92.17			44.700	41.200	UGL
		UAS2	07/07/92	S	2,4,6-Trinitrotoluene	85.12			1.210	1.030	UGL
		UAS2	07/07/92	S	2,4,6-Trinitrotoluene	76.61			12.100	9.270	UGL
		UAS2	07/07/92	S	2,4,6-Trinitrotoluene	82.64			12.100	10.080	UGL
		UAS2	07/07/92	S	2,4,6-Trinitrotoluene	87.34			80.600	70.400	UGL
		UAS2	07/07/92	S	2,4-Dinitrotoluene	85.37			0.123	0.105	UGL
		UAS2	07/07/92	S	2,4-Dinitrotoluene	83.74			1.230	1.030	UGL
		UAS2	07/07/92	S	2,4-Dinitrotoluene	93.12			1.230	1.170	UGL
		UAS2	07/07/92	S	2,4-Dinitrotoluene	93.90			16.400	15.400	UGL
		UAS2	07/07/92	S	2-Nitrotoluene (TIC)	77.45			0.674	0.522	UGL
		UAS2	07/07/92	S	2-Nitrotoluene (TIC)	73.44			6.740	4.950	UGL
		UAS2	07/07/92	S	2-Nitrotoluene (TIC)	88.28			6.740	5.950	UGL
		UAS2	07/07/92	S	2-Nitrotoluene (TIC)	79.88			101.000	88.600	UGL
		UAS2	07/07/92	S	Nitrobenzene	92.38			1.200	1.110	UGL
		UAS2	07/07/92	S	Nitrobenzene	81.38			12.000	9.780	UGL
		UAS2	07/07/92	S	Nitrobenzene	91.67			12.000	11.000	UGL
		UAS2	07/07/92	S	Nitrobenzene	81.31			96.300	78.300	UGL
		UAS2	07/07/92	S	Cyclonite (RDX)	100.41			2.440	2.450	UGL

Notes for Data Flags: 1 = Results less than ERL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Unit
ES	YXS	UM32	07/07/92	S	Cyclonite (RDX)	95.49			24.400	23.300	UGL
		UM32	07/07/92	S	Cyclonite (RDX)	100.00			24.400	24.400	UGL
		UM32	07/07/92	S	Cyclonite (RDX)	95.19			91.400	87.000	UGL
ES	YXU	UM32	07/18/92	S	1,3,5-Trinitrobenzene	80.69			0.958	0.773	UGL
		UM32	07/18/92	S	1,3,5-Trinitrobenzene	88.41			9.580	8.470	UGL
		UM32	07/18/92	S	1,3,5-Trinitrobenzene	94.26			9.580	9.030	UGL
		UM32	07/18/92	S	1,3,5-Trinitrobenzene	94.41			44.700	42.200	UGL
		UM32	07/18/92	S	2,4,6-Trinitrotoluene	97.52			1.210	1.180	UGL
		UM32	07/18/92	S	2,4,6-Trinitrotoluene	88.43			12.100	10.700	UGL
		UM32	07/18/92	S	2,4,6-Trinitrotoluene	93.39			12.100	11.300	UGL
		UM32	07/18/92	S	2,4,6-Trinitrotoluene	91.94			80.600	74.100	UGL
		UM32	07/18/92	S	2,4-Dinitrotoluene	83.74			0.123	0.103	UGL
		UM32	07/18/92	S	2,4-Dinitrotoluene	86.18			1.230	1.060	UGL
		UM32	07/18/92	S	2,4-Dinitrotoluene	90.24			1.230	1.110	UGL
		UM32	07/18/92	S	2,4-Dinitrotoluene	97.56			16.400	16.000	UGL
		UM32	07/18/92	S	2-Amino-4,6-dinitrotoluene	84.37			0.339	0.286	UGL
		UM32	07/18/92	S	2-Amino-4,6-dinitrotoluene	83.78			3.390	2.840	UGL
		UM32	07/18/92	S	2-Amino-4,6-dinitrotoluene	84.96			3.390	2.880	UGL
		UM32	07/18/92	S	2-Amino-4,6-dinitrotoluene	90.00			17.000	15.300	UGL
		UM32	07/18/92	S	2-Nitrotoluene (TIC)	58.61			0.674	0.395	UGL
		UM32	07/18/92	S	2-Nitrotoluene (TIC)	79.82			6.740	5.380	UGL
		UM32	07/18/92	S	2-Nitrotoluene (TIC)	82.49			6.740	5.560	UGL
		UM32	07/18/92	S	2-Nitrotoluene (TIC)	82.48			101.000	83.300	UGL
		UM32	07/18/92	S	Nitrobenzene	84.17			1.200	1.010	UGL
		UM32	07/18/92	S	Nitrobenzene	85.00			12.000	10.200	UGL
		UM32	07/18/92	S	Nitrobenzene	85.00			12.000	10.200	UGL
		UM32	07/18/92	S	Nitrobenzene	81.62			96.300	78.600	UGL
		UM32	07/18/92	S	Cyclonite (RDX)	95.90			2.440	2.340	UGL
		UM32	07/18/92	S	Cyclonite (RDX)	94.67			24.400	23.100	UGL
		UM32	07/18/92	S	Cyclonite (RDX)	103.69			24.400	25.300	UGL
		UM32	07/18/92	S	Cyclonite (RDX)	98.58			91.400	90.100	UGL
ES	YXV	UM32	07/23/92	S	1,3,5-Trinitrobenzene	83.09			0.958	0.796	UGL
		UM32	07/23/92	S	1,3,5-Trinitrobenzene	86.53			9.580	8.290	UGL
		UM32	07/23/92	S	1,3,5-Trinitrobenzene	90.71			9.580	8.690	UGL
		UM32	07/23/92	S	1,3,5-Trinitrobenzene	98.88			44.700	44.200	UGL
		UM32	07/23/92	S	2,4,6-Trinitrotoluene	101.65			1.210	1.230	UGL
		UM32	07/23/92	S	2,4,6-Trinitrotoluene	94.21			12.100	11.400	UGL
		UM32	07/23/92	S	2,4,6-Trinitrotoluene	97.52			12.100	11.800	UGL
		UM32	07/23/92	S	2,4,6-Trinitrotoluene	100.99			80.600	81.400	UGL
		UM32	07/23/92	S	2,4-Dinitrotoluene	88.62			0.123	0.109	UGL
		UM32	07/23/92	S	2,4-Dinitrotoluene	94.31			1.230	1.160	UGL
		UM32	07/23/92	S	2,4-Dinitrotoluene	96.75			1.230	1.190	UGL
		UM32	07/23/92	S	2,4-Dinitrotoluene	105.49			16.400	17.300	UGL
		UM32	07/23/92	S	2-Nitrotoluene (TIC)	76.56			0.674	0.516	UGL
		UM32	07/23/92	S	2-Nitrotoluene (TIC)	90.65			6.740	6.110	UGL
		UM32	07/23/92	S	2-Nitrotoluene (TIC)	91.54			6.740	6.170	UGL
		UM32	07/23/92	S	2-Nitrotoluene (TIC)	95.54			101.000	96.500	UGL
		UM32	07/23/92	S	Nitrobenzene	83.33			1.200	1.000	UGL
		UM32	07/23/92	S	Nitrobenzene	84.17			12.000	10.100	UGL
		UM32	07/23/92	S	Nitrobenzene	87.50			12.000	10.500	UGL
		UM32	07/23/92	S	Nitrobenzene	95.77			96.300	90.300	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CDB, R = Analyte required for reporting purposes but not current certified, X = Analyte recovery outside of certified range but within acceptable limits

Tosco-North Phase I RPT  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Conc'n.	Recovered Conc'n.	Units
ES	YXV	UAS2	07/23/92	S	Cyclonite (RDX)	83.20			2.440	2.030	UGL
		UAS2	07/23/92	S	Cyclonite (RDX)	87.30			24.400	21.300	UGL
		UAS2	07/23/92	S	Cyclonite (RDX)	92.62			24.400	22.400	UGL
		UAS2	07/23/92	S	Cyclonite (RDX)	99.23			91.400	90.700	UGL
ES	YXW	UAS2	07/23/92	S	1,3,5-Trinitrobenzene	78.71			0.958	0.754	UGL
		UAS2	07/23/92	S	1,3,5-Trinitrobenzene	91.13			9.580	8.730	UGL
		UAS2	07/23/92	S	1,3,5-Trinitrobenzene	96.03			9.580	9.200	UGL
		UAS2	07/23/92	S	1,3,5-Trinitrobenzene	89.26			44.700	39.900	UGL
		UAS2	07/23/92	S	2,4,6-Trinitrotoluene	100.83			1.210	1.220	UGL
		UAS2	07/23/92	S	2,4,6-Trinitrotoluene	96.69			12.100	11.700	UGL
		UAS2	07/23/92	S	2,4,6-Trinitrotoluene	100.00			12.100	12.100	UGL
		UAS2	07/23/92	S	2,4,6-Trinitrotoluene	91.32			80.600	73.600	UGL
		UAS2	07/23/92	S	2,4-Dinitrotoluene	65.85			0.123	0.081	UGL
		UAS2	07/23/92	S	2,4-Dinitrotoluene	95.12			1.230	1.170	UGL
		UAS2	07/23/92	S	2,4-Dinitrotoluene	97.56			1.230	1.200	UGL
		UAS2	07/23/92	S	2,4-Dinitrotoluene	97.56			16.400	16.000	UGL
		UAS2	07/23/92	S	2-Nitrotoluene (TIC)	63.06			0.674	0.425	UGL
		UAS2	07/23/92	S	2-Nitrotoluene (TIC)	89.47			6.740	6.030	UGL
		UAS2	07/23/92	S	2-Nitrotoluene (TIC)	91.10			6.740	6.140	UGL
		UAS2	07/23/92	S	2-Nitrotoluene (TIC)	86.34			101.000	87.100	UGL
		UAS2	07/23/92	S	Nitrobenzene	78.98			1.200	0.943	UGL
		UAS2	07/23/92	S	Nitrobenzene	89.17			12.000	10.700	UGL
		UAS2	07/23/92	S	Nitrobenzene	98.83			12.000	10.900	UGL
		UAS2	07/23/92	S	Nitrobenzene	84.11			96.300	81.000	UGL
		UAS2	07/23/92	S	Cyclonite (RDX)	90.98			2.440	2.220	UGL
		UAS2	07/23/92	S	Cyclonite (RDX)	97.54			24.400	23.800	UGL
		UAS2	07/23/92	S	Cyclonite (RDX)	103.69			24.400	25.300	UGL
		UAS2	07/23/92	S	Cyclonite (RDX)	89.61			91.400	81.900	UGL
ES	YXK	UAS2	07/26/92	S	1,3,5-Trinitrobenzene	75.47			0.958	0.723	UGL
		UAS2	07/26/92	S	1,3,5-Trinitrobenzene	71.92			9.580	6.890	UGL
		UAS2	07/26/92	S	1,3,5-Trinitrobenzene	76.83			9.580	7.360	UGL
		UAS2	07/26/92	S	1,3,5-Trinitrobenzene	75.62			44.700	33.800	UGL
		UAS2	07/26/92	S	2,4,6-Trinitrotoluene	98.35			1.210	1.190	UGL
		UAS2	07/26/92	S	2,4,6-Trinitrotoluene	83.47			12.100	10.100	UGL
		UAS2	07/26/92	S	2,4,6-Trinitrotoluene	89.26			12.100	10.800	UGL
		UAS2	07/26/92	S	2,4,6-Trinitrotoluene	80.45			80.600	65.000	UGL
		UAS2	07/26/92	S	2,4-Dinitrotoluene	78.05			0.123	0.096	UGL
		UAS2	07/26/92	S	2,4-Dinitrotoluene	84.35			1.230	1.040	UGL
		UAS2	07/26/92	S	2,4-Dinitrotoluene	91.06			1.230	1.120	UGL
		UAS2	07/26/92	S	2,4-Dinitrotoluene	94.51			16.400	15.900	UGL
		UAS2	07/26/92	S	2-Nitrotoluene (TIC)	67.21			0.674	0.433	UGL
		UAS2	07/26/92	S	2-Nitrotoluene (TIC)	82.34			6.740	5.330	UGL
		UAS2	07/26/92	S	2-Nitrotoluene (TIC)	91.34			6.740	6.170	UGL
		UAS2	07/26/92	S	2-Nitrotoluene (TIC)	85.84			101.000	86.700	UGL
		UAS2	07/26/92	S	Nitrobenzene	85.00			1.200	1.030	UGL
		UAS2	07/26/92	S	Nitrobenzene	74.92			12.000	8.990	UGL
		UAS2	07/26/92	S	Nitrobenzene	82.00			12.000	9.840	UGL
		UAS2	07/26/92	S	Nitrobenzene	77.88			96.300	75.000	UGL
		UAS2	07/26/92	S	Cyclonite (RDX)	87.30			2.440	2.130	UGL
		UAS2	07/26/92	S	Cyclonite (RDX)	74.39			24.400	18.200	UGL
		UAS2	07/26/92	S	Cyclonite (RDX)	79.51			24.400	19.400	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CGL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits



Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	YXX	UA32	07/26/92	S	Cyclonite (RDX)	75.16			91.400	68.700	UGL
ES	YYH	OD	05/20/92	S	Total petroleum hydrocarbons	95.46			4280.000	4000.000	UGL
ES	ZA1	JD17	06/16/92	S	Lead	82.74			0.481	0.398	UGG
		JD17	06/16/92	S	Lead	89.09			7.700	6.860	UGG
		JD17	06/16/92	S	Lead	91.37			7.880	7.200	UGG
ES	ZAJ	JD17	06/22/92	S	Lead	82.48			0.491	0.405	UGG
		JD17	06/22/92	S	Lead	97.36			7.960	7.750	UGG
		JD17	06/22/92	S	Lead	99.12			7.960	7.890	UGG
ES	ZAN	JD17	07/10/92	S	Lead	103.43			0.496	0.513	UGG
		JD17	07/10/92	S	Lead	98.84			7.790	7.700	UGG
		JD17	07/10/92	S	Lead	102.02			7.940	8.100	UGG
ES	ZAN	JD17	07/16/92	S	Lead	121.06			0.489	0.592	UGG
		JD17	07/16/92	S	Lead	102.00			7.510	7.640	UGG
		JD17	07/16/92	S	Lead	100.39			7.790	7.820	UGG
ES	ZAO	JD17	07/13/92	S	Lead	88.71			0.496	0.440	UGG
		JD17	07/13/92	S	Lead	98.43			7.620	7.500	UGG
		JD17	07/13/92	S	Lead	95.71			7.700	7.370	UGG
ES	ZAP	JD17	07/14/92	S	Lead	112.11			0.479	0.537	UGG
		JD17	07/14/92	S	Lead	110.00			7.700	8.470	UGG
		JD17	07/14/92	S	Lead	109.32			7.830	8.560	UGG
ES	ZAS	JD17	07/14/92	S	Lead	96.80			0.469	0.454	UGG
		JD17	07/14/92	S	Lead	106.29			7.790	8.280	UGG
		JD17	07/14/92	S	Lead	107.65			7.840	8.440	UGG
ES	ZAM	JD17	07/25/92	S	Lead	94.59			0.481	0.455	UGG
		JD17	07/25/92	S	Lead	84.52			7.560	6.390	UGG
		JD17	07/25/92	S	Lead	90.75			7.570	6.870	UGG
ES	ZAX	JD17	08/17/92	S	Lead	89.42			0.482	0.431	UGG
		JD17	08/17/92	S	Lead	90.83			7.820	7.040	UGG
		JD17	08/17/92	S	Lead	94.34			7.950	7.500	UGG
ES	ZA2	JD17	08/16/92	S	Lead	78.34			0.476	0.373	UGG
		JD17	08/16/92	S	Lead	91.81			7.680	7.860	UGG
		JD17	08/16/92	S	Lead	95.98			7.970	7.650	UGG
ES	ZCA	TF27	05/27/92	S	Phosphate	96.00			25.000	24.000	UGL
		TF27	05/27/92	S	Phosphate	101.33			375.000	380.000	UGL
		TF27	05/27/92	S	Phosphate	101.33			375.000	380.000	UGL
ES	ZCB	TF27	06/24/92	S	Phosphate	92.00			25.000	23.000	UGL
		TF27	06/24/92	S	Phosphate	98.67			375.000	370.000	UGL
		TF27	06/24/92	S	Phosphate	101.33			375.000	380.000	UGL
ES	ZCC	TF27	07/08/92	S	Phosphate	112.80			25.000	28.000	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

APPENDIX B-18

Tecumseh North Phase I BFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZCC	TF27	07/08/92	S	Phosphate	98.67			375.000	370.000	UGL
		TF27	07/08/92	S	Phosphate	101.33			375.000	380.000	UGL
ES	ZCD	TF27	07/22/92	S	Phosphate	92.00			25.000	23.000	UGL
		TF27	07/22/92	S	Phosphate	98.67			375.000	370.000	UGL
		TF27	07/22/92	S	Phosphate	101.33			375.000	380.000	UGL
ES	ZCE	TF27	08/11/92	S	Phosphate	108.00			25.000	27.000	UGL
		TF27	08/11/92	S	Phosphate	104.00			375.000	390.000	UGL
		TF27	08/11/92	S	Phosphate	106.67			375.000	400.000	UGL
ES	ZCF	TF27	09/03/92	S	Phosphate	104.00			25.000	26.000	UGL
		TF27	09/03/92	S	Phosphate	101.33			375.000	380.000	UGL
		TF27	09/03/92	S	Phosphate	101.33			375.000	380.000	UGL
ES	ZDC	KF10	06/12/92	S	Nitrite, nitrate - nonspecified	99.17			1.200	1.190	UGG
		KF10	06/12/92	S	Nitrite, nitrate - nonspecified	102.00			10.000	10.200	UGG
		KF10	06/12/92	S	Nitrite, nitrate - nonspecified	104.00			10.000	10.400	UGG
ES	ZDD	KF10	06/24/92	S	Nitrite, nitrate - nonspecified	97.50			1.200	1.170	UGG
		KF10	06/24/92	S	Nitrite, nitrate - nonspecified	98.40			10.000	9.840	UGG
		KF10	06/24/92	S	Nitrite, nitrate - nonspecified	98.60			10.000	9.860	UGG
ES	ZDE	KF10	06/30/92	S	Nitrite, nitrate - nonspecified	95.00			1.200	1.140	UGG
		KF10	06/30/92	S	Nitrite, nitrate - nonspecified	95.00			10.000	9.500	UGG
		KF10	06/30/92	S	Nitrite, nitrate - nonspecified	95.70			10.000	9.570	UGG
ES	ZDF	KF10	07/06/92	S	Nitrite, nitrate - nonspecified	100.00			1.200	1.200	UGG
		KF10	07/06/92	S	Nitrite, nitrate - nonspecified	94.10			10.000	9.410	UGG
		KF10	07/06/92	S	Nitrite, nitrate - nonspecified	94.30			10.000	9.430	UGG
ES	ZDG	KF10	07/09/92	S	Nitrite, nitrate - nonspecified	93.33			1.200	1.120	UGG
		KF10	07/09/92	S	Nitrite, nitrate - nonspecified	92.50			10.000	9.250	UGG
		KF10	07/09/92	S	Nitrite, nitrate - nonspecified	93.20			10.000	9.320	UGG
ES	ZDH	KF10	07/13/92	S	Nitrite, nitrate - nonspecified	96.67			1.200	1.160	UGG
		KF10	07/13/92	S	Nitrite, nitrate - nonspecified	95.30			10.000	9.530	UGG
		KF10	07/13/92	S	Nitrite, nitrate - nonspecified	95.40			10.000	9.540	UGG
ES	ZDJ	KF10	07/16/92	S	Nitrite, nitrate - nonspecified	93.33			1.200	1.120	UGG
		KF10	07/16/92	S	Nitrite, nitrate - nonspecified	94.30			10.000	9.430	UGG
		KF10	07/16/92	S	Nitrite, nitrate - nonspecified	95.30			10.000	9.530	UGG
ES	ZDK	KF10	07/20/92	S	Nitrite, nitrate - nonspecified	94.17			1.200	1.130	UGG
		KF10	07/20/92	S	Nitrite, nitrate - nonspecified	94.30			10.000	9.430	UGG
		KF10	07/20/92	S	Nitrite, nitrate - nonspecified	95.70			10.000	9.570	UGG
ES	ZDL	KF10	07/24/92	S	Nitrite, nitrate - nonspecified	97.50			1.200	1.170	UGG
		KF10	07/24/92	S	Nitrite, nitrate - nonspecified	95.10			10.000	9.510	UGG
		KF10	07/24/92	S	Nitrite, nitrate - nonspecified	97.10			10.000	9.710	UGG
ES	ZDN	KF10	07/28/92	S	Nitrite, nitrate - nonspecified	97.50			1.200	1.170	UGG
		KF10	07/28/92	S	Nitrite, nitrate - nonspecified	96.10			10.000	9.610	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CBL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZDM	KF10	07/30/92	S	Nitrite, nitrate - nonspecified	97.00			10.000	9.700	UGG
ES	ZDM	KF10	08/05/92	S	Nitrite, nitrate - nonspecified	97.50			1.200	1.170	UGG
		KF10	08/05/92	S	Nitrite, nitrate - nonspecified	94.80			10.000	9.480	UGG
		KF10	08/05/92	S	Nitrite, nitrate - nonspecified	95.50			10.000	9.550	UGG
ES	ZDO	KF10	08/10/92	S	Nitrite, nitrate - nonspecified	98.33			1.200	1.180	UGG
		KF10	08/10/92	S	Nitrite, nitrate - nonspecified	96.00			10.000	9.600	UGG
		KF10	08/10/92	S	Nitrite, nitrate - nonspecified	96.70			10.000	9.670	UGG
ES	ZDP	KF10	08/18/92	S	Nitrite, nitrate - nonspecified	100.00			1.200	1.200	UGG
		KF10	08/18/92	S	Nitrite, nitrate - nonspecified	98.10			10.000	9.810	UGG
		KF10	08/18/92	S	Nitrite, nitrate - nonspecified	98.20			10.000	9.820	UGG
ES	ZDR	KF10	08/24/92	S	Nitrite, nitrate - nonspecified	94.17			1.200	1.130	UGG
		KF10	08/24/92	S	Nitrite, nitrate - nonspecified	98.80			10.000	9.880	UGG
		KF10	08/24/92	S	Nitrite, nitrate - nonspecified	99.70			10.000	9.970	UGG
ES	ZDS	KF10	08/27/92	S	Nitrite, nitrate - nonspecified	97.50			1.200	1.170	UGG
		KF10	08/27/92	S	Nitrite, nitrate - nonspecified	93.40			10.000	9.340	UGG
		KF10	08/27/92	S	Nitrite, nitrate - nonspecified	94.70			10.000	9.470	UGG
	JT	KF10	09/02/92	S	Nitrite, nitrate - nonspecified	95.83			1.200	1.150	UGG
		KF10	09/02/92	S	Nitrite, nitrate - nonspecified	94.50			10.000	9.450	UGG
		KF10	09/02/92	S	Nitrite, nitrate - nonspecified	94.70			10.000	9.470	UGG
ES	ZDU	KF10	09/04/92	S	Nitrite, nitrate - nonspecified	100.83			1.200	1.210	UGG
		KF10	09/04/92	S	Nitrite, nitrate - nonspecified	94.80			10.000	9.480	UGG
		KF10	09/04/92	S	Nitrite, nitrate - nonspecified	95.60			10.000	9.560	UGG
ES	ZEE	KY01	06/11/92	S	Cyanide	113.23			1.890	2.140	UGG
		KY01	06/11/92	S	Cyanide	97.48			7.350	7.360	UGG
		KY01	06/11/92	S	Cyanide	102.12			7.550	7.710	UGG
ES	ZEF	KY01	06/23/92	S	Cyanide	90.40			1.770	1.600	UGG
		KY01	06/23/92	S	Cyanide	90.91			7.260	6.600	UGG
		KY01	06/23/92	S	Cyanide	105.10			7.260	7.630	UGG
ES	ZEG	KY01	06/25/92	S	Cyanide	91.62			1.910	1.750	UGG
		KY01	06/25/92	S	Cyanide	90.94			7.620	6.930	UGG
		KY01	06/25/92	S	Cyanide	91.34			7.620	6.960	UGG
ES	ZEH	KY01	07/01/92	S	Cyanide	103.66			1.910	1.980	UGG
		KY01	07/01/92	S	Cyanide	90.52			7.700	6.970	UGG
		KY01	07/01/92	S	Cyanide	96.10			7.700	7.400	UGG
ES	ZEI	KY01	07/09/92	S	Cyanide	104.15			1.930	2.010	UGG
		KY01	07/09/92	S	Cyanide	100.52			7.780	7.740	UGG
		KY01	07/09/92	S	Cyanide	100.78			7.780	7.760	UGG
	JJ	KY01	07/07/92	S	Cyanide	86.91			1.910	1.640	UGG
		KY01	07/07/92	S	Cyanide	92.39			7.620	7.840	UGG
		KY01	07/07/92	S	Cyanide	92.65			7.620	7.880	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Toddle-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZEX	KY01	07/14/92	S	Cyanide	93.34			1.930	1.840	UGG
		KY01	07/14/92	S	Cyanide	93.90			7.700	7.230	UGG
		KY01	07/14/92	S	Cyanide	93.90			7.700	7.230	UGG
ES	ZEL	KY01	07/21/92	S	Cyanide	118.65			1.930	2.290	UGG
		KY01	07/21/92	S	Cyanide	101.95			7.700	7.850	UGG
		KY01	07/21/92	S	Cyanide	102.34			7.700	7.880	UGG
ES	ZEH	KY01	07/22/92	S	Cyanide	79.79			1.930	1.540	UGG
		KY01	07/22/92	S	Cyanide	110.78			7.700	8.530	UGG
		KY01	07/22/92	S	Cyanide	111.43			7.700	8.580	UGG
ES	ZEN	KY01	07/24/92	S	Cyanide	103.63			1.930	2.000	UGG
		KY01	07/24/92	S	Cyanide	105.19			7.700	8.180	UGG
		KY01	07/24/92	S	Cyanide	105.58			7.700	8.130	UGG
ES	ZEP	KY01	08/04/92	S	Cyanide	101.04			1.930	1.930	UGG
		KY01	08/04/92	S	Cyanide	101.56			7.700	7.820	UGG
		KY01	08/04/92	S	Cyanide	102.21			7.700	7.870	UGG
ES	ZEQ	KY01	07/27/92	S	Cyanide	99.80			0.180	0.099	
ES	ZES	KY01	08/21/92	S	Cyanide	96.89			1.930	1.870	UGG
		KY01	08/20/92	S	Cyanide	99.08			7.620	7.530	UGG
		KY01	08/20/92	S	Cyanide	104.94			7.700	8.080	UGG
ES	ZET	KY01	08/19/92	S	Cyanide	102.62			1.910	1.960	UGG
		KY01	08/19/92	S	Cyanide	101.05			7.620	7.700	UGG
		KY01	08/19/92	S	Cyanide	100.45			7.700	7.750	UGG
ES	ZEY	KY01	08/18/92	S	Cyanide	109.33			1.930	2.110	UGG
		KY01	08/18/92	S	Cyanide	92.99			7.700	7.160	UGG
		KY01	08/18/92	S	Cyanide	96.75			7.700	7.450	UGG
ES	ZFD	UN14	07/31/92	S	Silver	67.18			0.989	0.651	UGL
		UN14	07/31/92	S	2,4-Dichlorophenoxyacetic acid / 2,4-D	63.83			1.000	1.200	UGL
ES	ZBA	9921	06/17/92	S	Selenium	98.80			5.000	4.900	UGL
		9921	06/17/92	S	Selenium	90.48			75.000	67.000	UGL
		9921	06/17/92	S	Selenium	92.27			75.000	69.200	UGL
ES	ZOD	9921	07/10/92	S	Selenium	92.80			5.000	4.600	UGL
		9921	07/10/92	S	Selenium	90.13			75.000	67.000	UGL
		9921	07/10/92	S	Selenium	90.53			75.000	67.900	UGL
ES	ZOB	9921	07/25/92	S	Selenium	88.88			5.000	4.400	UGL
		9921	07/25/92	S	Selenium	90.95			75.000	68.200	UGL
		9921	07/25/92	S	Selenium	92.40			75.000	69.300	UGL
ES	ZBK	9921	08/25/92	S	Selenium	114.80			5.000	5.700	UGL
		9921	08/25/92	S	Selenium	99.87			75.000	74.900	UGL
		9921	08/25/92	S	Selenium	102.80			75.000	76.900	UGL

Notes for Data Flags: 1 = Results less than GRL but greater than GBL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tosco-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Splined Concn.	Recovered Concn.	Units
ES	Z80	8021	08/08/92	S	Selenium	100.00			5.000	5.000	UGL
		8021	08/08/92	S	Selenium	96.80			75.000	72.600	UGL
		8021	08/08/92	S	Selenium	100.53			75.000	75.400	UGL
ES	Z83	8021	09/10/92	S	Selenium	116.00			5.000	5.000	UGL
		8021	09/10/92	S	Selenium	98.00			75.000	73.500	UGL
		8021	09/10/92	S	Selenium	98.53			75.000	73.900	UGL
ES	Z87	8021	08/14/92	S	Selenium	100.00			5.000	5.000	UGL
		8021	08/14/92	S	Selenium	100.00			75.000	75.000	UGL
		8021	08/14/92	S	Selenium	100.53			75.000	75.400	UGL
ES	ZHB	LW12	07/07/92	S	1,3,5-Trinitrobenzene	60.52			1.150	0.696	UGG
		LW12	07/07/92	S	1,3,5-Trinitrobenzene	76.14			9.220	7.020	UGG
		LW12	07/07/92	S	1,3,5-Trinitrobenzene	86.44			9.220	7.970	UGG
		LW12	07/07/92	S	2,4,6-Trinitrotoluene	85.00			1.100	0.935	UGG
		LW12	07/07/92	S	2,4,6-Trinitrotoluene	89.77			8.800	7.900	UGG
		LW12	07/07/92	S	2,4,6-Trinitrotoluene	102.73			8.800	9.040	UGG
		LW12	07/07/92	S	2,4-Dinitrotoluene	70.89			1.230	0.872	UGG
		LW12	07/07/92	S	2,4-Dinitrotoluene	72.66			9.840	7.150	UGG
		LW12	07/07/92	S	2,4-Dinitrotoluene	82.01			9.840	8.070	UGG
		LW12	07/07/92	S	2-Nitrotoluene (TIC)	91.70			0.530	0.486	UGG
		LW12	07/07/92	S	2-Nitrotoluene (TIC)	77.63			22.800	17.700	UGG
		LW12	07/07/92	S	2-Nitrotoluene (TIC)	90.79			22.800	20.700	UGG
		LW12	07/07/92	S	2-Nitrotoluene (TIC)	90.79			45.600	41.400	UGG
		LW12	07/07/92	S	Nitrobenzene	86.60			3.060	2.650	UGG
		LW12	07/07/92	S	Nitrobenzene	83.27			24.900	20.400	UGG
		LW12	07/07/92	S	Nitrobenzene	94.29			24.900	23.100	UGG
		LW12	07/07/92	S	Cyclonite (RDX)	101.82			1.100	1.120	UGG
		LW12	07/07/92	S	Cyclonite (RDX)	83.62			8.790	7.350	UGG
		LW12	07/07/92	S	Cyclonite (RDX)	94.77			8.790	8.330	UGG
ES	ZNC	LW12	07/07/92	S	1,3,5-Trinitrobenzene	77.57			1.150	0.892	UGG
		LW12	07/07/92	S	1,3,5-Trinitrobenzene	85.68			9.220	7.900	UGG
		LW12	07/07/92	S	1,3,5-Trinitrobenzene	87.64			9.220	8.080	UGG
		LW12	07/07/92	S	2,4,6-Trinitrotoluene	90.91			1.100	1.000	UGG
		LW12	07/07/92	S	2,4,6-Trinitrotoluene	103.41			8.800	9.100	UGG
		LW12	07/07/92	S	2,4,6-Trinitrotoluene	105.68			8.800	9.300	UGG
		LW12	07/07/92	S	2,4-Dinitrotoluene	88.62			1.230	1.090	UGG
		LW12	07/07/92	S	2,4-Dinitrotoluene	84.45			9.840	8.310	UGG
		LW12	07/07/92	S	2,4-Dinitrotoluene	85.06			9.840	8.370	UGG
		LW12	07/07/92	S	2-Nitrotoluene (TIC)	84.72			0.530	0.449	UGG
		LW12	07/07/92	S	2-Nitrotoluene (TIC)	91.67			22.800	20.900	UGG
		LW12	07/07/92	S	2-Nitrotoluene (TIC)	92.98			22.800	21.300	UGG
		LW12	07/07/92	S	2-Nitrotoluene (TIC)	95.83			45.600	43.700	UGG
		LW12	07/07/92	S	Nitrobenzene	92.16			3.060	2.820	UGG
		LW12	07/07/92	S	Nitrobenzene	95.92			24.900	23.500	UGG
		LW12	07/07/92	S	Nitrobenzene	97.35			24.900	23.900	UGG
		LW12	07/07/92	S	Cyclonite (RDX)	92.73			1.100	1.030	UGG
		LW12	07/07/92	S	Cyclonite (RDX)	95.68			8.790	8.410	UGG
		LW12	07/07/92	S	Cyclonite (RDX)	95.79			8.790	8.420	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CSD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

## APPENDIX C-10

Tuttle-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZNE	LM12	07/09/92	S	1,3,5-Trinitrobenzene	74.89			1.130	0.852	UGG
		LM12	07/09/92	S	1,3,5-Trinitrobenzene	85.85			9.220	7.840	UGG
		LM12	07/09/92	S	1,3,5-Trinitrobenzene	87.53			9.220	8.070	UGG
		LM12	07/09/92	S	2,4,6-Trinitrotoluene	94.55			1.100	1.040	UGG
		LM12	07/09/92	S	2,4,6-Trinitrotoluene	98.30			8.800	8.650	UGG
		LM12	07/09/92	S	2,4,6-Trinitrotoluene	102.16			8.800	8.990	UGG
		LM12	07/09/92	S	2,4-Dinitrotoluene	86.18			1.230	1.060	UGG
		LM12	07/09/92	S	2,4-Dinitrotoluene	87.09			9.840	8.570	UGG
		LM12	07/09/92	S	2,4-Dinitrotoluene	87.90			9.840	8.610	UGG
		LM12	07/09/92	S	2-Nitrotoluene (TIC)	85.46			0.530	0.454	UGG
		LM12	07/09/92	S	2-Nitrotoluene (TIC)	95.42			22.800	21.300	UGG
		LM12	07/09/92	S	2-Nitrotoluene (TIC)	95.86			22.800	21.400	UGG
		LM12	07/09/92	S	2-Nitrotoluene (TIC)	95.18			45.600	43.400	UGG
		LM12	07/09/92	S	Nitrobenzene	100.00			3.060	3.060	UGG
		LM12	07/09/92	S	Nitrobenzene	95.86			24.900	22.800	UGG
		LM12	07/09/92	S	Nitrobenzene	95.47			24.900	22.900	UGG
		LM12	07/09/92	S	Cyclonite (RDK)	98.91			1.100	1.000	UGG
		LM12	07/09/92	S	Cyclonite (RDK)	96.82			8.790	8.440	UGG
		LM12	07/09/92	S	Cyclonite (RDK)	96.95			8.790	8.520	UGG
ES	ZNF	LM12	07/11/92	S	1,3,5-Trinitrobenzene	77.30			1.130	0.889	UGG
		LM12	07/11/92	S	1,3,5-Trinitrobenzene	81.56			9.220	7.520	UGG
		LM12	07/11/92	S	1,3,5-Trinitrobenzene	87.64			9.220	8.800	UGG
		LM12	07/11/92	S	2,4,6-Trinitrotoluene	94.55			1.100	1.040	UGG
		LM12	07/11/92	S	2,4,6-Trinitrotoluene	102.73			8.800	9.040	UGG
		LM12	07/11/92	S	2,4,6-Trinitrotoluene	105.18			8.800	9.080	UGG
		LM12	07/11/92	S	2,4-Dinitrotoluene	82.95			1.230	1.020	UGG
		LM12	07/11/92	S	2,4-Dinitrotoluene	86.38			9.840	8.500	UGG
		LM12	07/11/92	S	2,4-Dinitrotoluene	86.38			9.840	8.500	UGG
		LM12	07/11/92	S	2-Nitrotoluene (TIC)	88.49			0.530	0.469	UGG
		LM12	07/11/92	S	2-Nitrotoluene (TIC)	91.23			22.800	20.800	UGG
		LM12	07/11/92	S	2-Nitrotoluene (TIC)	91.23			22.800	20.800	UGG
		LM12	07/11/92	S	2-Nitrotoluene (TIC)	88.38			45.600	40.300	UGG
		LM12	07/11/92	S	Nitrobenzene	92.48			3.060	2.830	UGG
		LM12	07/11/92	S	Nitrobenzene	91.43			24.900	22.400	UGG
		LM12	07/11/92	S	Nitrobenzene	92.34			24.900	22.600	UGG
		LM12	07/11/92	S	Cyclonite (RDK)	96.36			1.100	1.010	UGG
		LM12	07/11/92	S	Cyclonite (RDK)	95.68			8.790	8.410	UGG
		LM12	07/11/92	S	Cyclonite (RDK)	96.47			8.790	8.480	UGG
ES	ZNG	LM12	07/12/92	S	1,3,5-Trinitrobenzene	68.52			1.130	0.708	UGG
		LM12	07/12/92	S	1,3,5-Trinitrobenzene	87.85			9.220	8.100	UGG
		LM12	07/12/92	S	1,3,5-Trinitrobenzene	89.99			9.220	8.280	UGG
		LM12	07/12/92	S	2,4,6-Trinitrotoluene	88.09			1.100	0.980	UGG
		LM12	07/12/92	S	2,4,6-Trinitrotoluene	101.98			8.800	8.970	UGG
		LM12	07/12/92	S	2,4,6-Trinitrotoluene	105.25			8.800	9.260	UGG
		LM12	07/12/92	S	2,4-Dinitrotoluene	77.34			1.230	0.930	UGG
		LM12	07/12/92	S	2,4-Dinitrotoluene	87.09			9.840	8.570	UGG
		LM12	07/12/92	S	2,4-Dinitrotoluene	87.40			9.840	8.680	UGG
		LM12	07/12/92	S	2-Nitrotoluene (TIC)	98.80			0.530	0.477	UGG
		LM12	07/12/92	S	2-Nitrotoluene (TIC)	98.98			22.800	21.300	UGG
		LM12	07/12/92	S	2-Nitrotoluene (TIC)	95.42			22.800	21.300	UGG

Notes for Data Flags: 1 = Results less than GML but greater than GSD; R = Analyte required for reporting purposes but not currently certified; X = Analyte recovery outside of certified range but within acceptable limits

Tosco-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZNG	LW12	07/12/92	S	2-Nitrotoluene (TIC)	92.32			45.600	42.100	UGG
		LW12	07/12/92	S	Nitrobenzene	88.56			3.060	2.710	UGG
		LW12	07/12/92	S	Nitrobenzene	93.47			24.500	22.900	UGG
		LW12	07/12/92	S	Nitrobenzene	93.47			-24.500	22.900	UGG
		LW12	07/12/92	S	Cyclonite (RDX)	56.45			1.100	0.621	UGG
		LW12	07/12/92	S	Cyclonite (RDX)	98.07			8.790	8.620	UGG
		LW12	07/12/92	S	Cyclonite (RDX)	99.20			8.790	8.720	UGG
ES	ZHI	LW12	07/08/92	S	1,3,5-Trinitrobenzene	64.87			1.150	0.746	UGG
		LW12	07/08/92	S	1,3,5-Trinitrobenzene	84.06			9.220	7.750	UGG
		LW12	07/08/92	S	1,3,5-Trinitrobenzene	92.52			9.220	8.530	UGG
		LW12	07/08/92	S	2,4,6-Trinitrotoluene	83.64			1.100	0.920	UGG
		LW12	07/08/92	S	2,4,6-Trinitrotoluene	99.43			8.800	8.750	UGG
		LW12	07/08/92	S	2,4,6-Trinitrotoluene	105.80			8.800	9.310	UGG
		LW12	07/08/92	S	2,4-Dinitrotoluene	78.86			1.230	0.970	UGG
		LW12	07/08/92	S	2,4-Dinitrotoluene	86.28			9.840	8.490	UGG
		LW12	07/08/92	S	2,4-Dinitrotoluene	88.52			9.840	8.710	UGG
		LW12	07/08/92	S	2-Nitrotoluene (TIC)	74.15			0.530	0.393	UGG
		LW12	07/08/92	S	2-Nitrotoluene (TIC)	88.60			22.800	20.200	UGG
		LW12	07/08/92	S	2-Nitrotoluene (TIC)	94.30			22.800	21.500	UGG
		LW12	07/09/92	S	2-Nitrotoluene (TIC)	93.64			45.600	42.700	UGG
		LW12	07/08/92	S	Nitrobenzene	89.87			3.060	2.750	UGG
		LW12	07/08/92	S	Nitrobenzene	93.06			24.500	22.800	UGG
		LW12	07/08/92	S	Nitrobenzene	93.92			24.500	23.500	UGG
		LW12	07/08/92	S	Cyclonite (RDX)	85.36			1.100	0.939	UGG
		LW12	07/08/92	S	Cyclonite (RDX)	98.41			8.790	8.650	UGG
		LW12	07/08/92	S	Cyclonite (RDX)	100.46			8.790	8.830	UGG
ES	ZHI	LW12	07/12/92	S	1,3,5-Trinitrobenzene	76.26			1.150	0.877	UGG
		LW12	07/12/92	S	1,3,5-Trinitrobenzene	83.19			9.220	7.670	UGG
		LW12	07/12/92	S	1,3,5-Trinitrobenzene	84.92			9.220	7.830	UGG
		LW12	07/23/92	S	1,3,5-Trinitrobenzene	92.19			9.220	8.500	UGG
		LW12	07/12/92	S	2,4,6-Trinitrotoluene	81.09			1.100	0.892	UGG
		LW12	07/12/92	S	2,4,6-Trinitrotoluene	84.20			8.800	7.410	UGG
		LW12	07/23/92	S	2,4,6-Trinitrotoluene	86.02			8.800	7.570	UGG
		LW12	07/12/92	S	2,4,6-Trinitrotoluene	86.25			8.800	7.590	UGG
		LW12	07/12/92	S	2,4-Dinitrotoluene	87.80			1.230	1.080	UGG
		LW12	07/23/92	S	2,4-Dinitrotoluene	83.03			9.840	8.170	UGG
		LW12	07/12/92	S	2,4-Dinitrotoluene	84.76			9.840	8.340	UGG
		LW12	07/12/92	S	2,4-Dinitrotoluene	86.89			9.840	8.550	UGG
		LW12	07/12/92	S	2-Nitrotoluene (TIC)	72.08			0.530	0.382	UGG
		LW12	07/12/92	S	2-Nitrotoluene (TIC)	85.09			22.800	19.400	UGG
		LW12	07/23/92	S	2-Nitrotoluene (TIC)	86.84			22.800	19.800	UGG
		LW12	07/12/92	S	2-Nitrotoluene (TIC)	91.23			22.800	20.800	UGG
		LW12	07/12/92	S	2-Nitrotoluene (TIC)	97.81			45.600	44.600	UGG
		LW12	07/12/92	S	Nitrobenzene	87.91			3.060	2.690	UGG
		LW12	07/12/92	S	Nitrobenzene	87.76			24.500	21.500	UGG
		LW12	07/12/92	S	Nitrobenzene	89.80			24.500	22.000	UGG
		LW12	07/23/92	S	Nitrobenzene	93.47			24.500	22.900	UGG
		LW12	07/12/92	S	Cyclonite (RDX)	98.18			1.100	0.992	UGG
		LW12	07/12/92	S	Cyclonite (RDX)	88.51			8.790	7.700	UGG
		LW12	07/12/92	S	Cyclonite (RDX)	89.87			8.790	7.980	UGG
		LW12	07/23/92	S	Cyclonite (RDX)	94.45			8.790	8.320	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CGL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Teosle-North Phase I OFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZHM	LW12	07/24/92	S	1,3,5-Trinitrobenzene	50.70			1.130	0.583	UGG
		LW12	07/24/92	S	1,3,5-Trinitrobenzene	81.89			9.220	7.550	UGG
		LW12	07/24/92	S	1,3,5-Trinitrobenzene	85.90			9.220	7.920	UGG
		LW12	07/24/92	S	2,4,6-Trinitrotoluene	69.55			1.100	0.765	UGG
		LW12	07/24/92	S	2,4,6-Trinitrotoluene	79.55			8.800	7.000	UGG
		LW12	07/24/92	S	2,4,6-Trinitrotoluene	82.84			8.800	7.290	UGG
		LW12	07/24/92	S	2,4-Dinitrotoluene	70.33			1.230	0.865	UGG
		LW12	07/24/92	S	2,4-Dinitrotoluene	80.39			9.840	7.910	UGG
		LW12	07/24/92	S	2,4-Dinitrotoluene	80.79			9.840	7.950	UGG
		LW12	07/24/92	S	2-Nitrotoluene (TIC)	105.66			0.530	0.560	UGG
		LW12	07/24/92	S	2-Nitrotoluene (TIC)	95.61			22.800	21.800	UGG
		LW12	07/24/92	S	2-Nitrotoluene (TIC)	96.85			22.800	21.900	UGG
		LW12	07/24/92	S	2-Nitrotoluene (TIC)	98.46			45.600	44.900	UGG
		LW12	07/24/92	S	Nitrobenzene	86.27			3.060	2.640	UGG
		LW12	07/24/92	S	Nitrobenzene	91.43			24.500	22.400	UGG
		LW12	07/24/92	S	Nitrobenzene	92.65			24.500	22.700	UGG
		LW12	07/24/92	S	Cyclonite (RDX)	96.36			1.180	1.060	UGG
		LW12	07/24/92	S	Cyclonite (RDX)	91.47			8.790	8.060	UGG
		LW12	07/24/92	S	Cyclonite (RDX)	91.58			8.790	8.050	UGG
ES	ZMP	LW12	07/25/92	S	1,3,5-Trinitrobenzene	15.30			1.150	0.176	UGG
		LW12	07/25/92	S	1,3,5-Trinitrobenzene	66.92			9.220	6.170	UGG
		LW12	07/31/92	S	1,3,5-Trinitrobenzene	67.68			9.220	6.240	UGG
		LW12	07/25/92	S	1,3,5-Trinitrobenzene	79.28			9.220	7.310	UGG
		LW12	07/25/92	S	2,4,6-Trinitrotoluene	60.73			1.100	0.668	UGG
		LW12	07/25/92	S	2,4,6-Trinitrotoluene	86.25			8.800	7.590	UGG
		LW12	07/25/92	S	2,4,6-Trinitrotoluene	90.23			8.800	7.940	UGG
		LW12	07/31/92	S	2,4,6-Trinitrotoluene	90.68			8.800	7.980	UGG
		LW12	07/25/92	S	2,4-Dinitrotoluene	72.11			1.230	0.887	UGG
		LW12	07/25/92	S	2,4-Dinitrotoluene	86.48			9.840	8.510	UGG
		LW12	07/25/92	S	2,4-Dinitrotoluene	87.70			9.840	8.630	UGG
		LW12	07/31/92	S	2,4-Dinitrotoluene	89.13			9.840	8.770	UGG
		LW12	07/25/92	S	2-Nitrotoluene (TIC)	87.55			0.530	0.464	UGG
		LW12	07/25/92	S	2-Nitrotoluene (TIC)	91.67			22.800	20.900	UGG
		LW12	07/25/92	S	2-Nitrotoluene (TIC)	91.67			22.800	20.900	UGG
		LW12	07/31/92	S	2-Nitrotoluene (TIC)	95.18			22.800	21.700	UGG
		LW12	07/25/92	S	2-Nitrotoluene (TIC)	97.81			45.600	44.600	UGG
		LW12	07/25/92	S	Nitrobenzene	93.46			3.060	2.860	UGG
		LW12	07/25/92	S	Nitrobenzene	99.18			24.500	24.300	UGG
		LW12	07/25/92	S	Nitrobenzene	99.99			24.500	24.400	UGG
ES	ZMO	LW12	07/24/92	S	1,3,5-Trinitrobenzene	36.52			1.130	0.420	UGG
		LW12	07/24/92	S	1,3,5-Trinitrobenzene	70.72			9.220	6.520	UGG
		LW12	07/24/92	S	1,3,5-Trinitrobenzene	76.57			9.220	7.060	UGG
		LW12	07/24/92	S	2,4,6-Trinitrotoluene	72.27			1.100	0.795	UGG
		LW12	07/24/92	S	2,4,6-Trinitrotoluene	83.18			8.800	7.320	UGG
		LW12	07/24/92	S	2,4,6-Trinitrotoluene	85.48			8.800	7.340	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CBL, 2 = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits



Tecela-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZHO	LW12	07/24/92	S	2,4-Dinitrotoluene	79.11			1.230	0.973	UGG
		LW12	07/24/92	S	2,4-Dinitrotoluene	83.54			9.840	8.220	UGG
		LW12	07/24/92	S	2,4-Dinitrotoluene	85.47			9.840	8.410	UGG
		LW12	07/24/92	S	2-Nitrotoluene (TIC)	84.72			0.530	0.449	UGG
		LW12	07/24/92	S	2-Nitrotoluene (TIC)	91.67			22.800	20.900	UGG
		LW12	07/24/92	S	2-Nitrotoluene (TIC)	93.42			22.800	21.300	UGG
		LW12	07/24/92	S	2-Nitrotoluene (TIC)	91.67			45.600	41.800	UGG
		LW12	07/24/92	S	Nitrobenzene	88.89			3.060	2.720	UGG
		LW12	07/24/92	S	Nitrobenzene	89.39			24.500	21.900	UGG
		LW12	07/24/92	S	Nitrobenzene	89.80			24.500	22.000	UGG
		LW12	07/24/92	S	Cyclonite (RDX)	74.36			1.100	0.818	UGG
		LW12	07/24/92	S	Cyclonite (RDX)	91.47			8.790	8.040	UGG
		LW12	07/24/92	S	Cyclonite (RDX)	92.83			8.790	8.160	UGG
ES	ZHS	LW12	07/30/92	S	1,3,5-Trinitrobenzene	72.17			1.150	0.830	UGG
		LW12	07/30/92	S	1,3,5-Trinitrobenzene	82.54			9.220	7.610	UGG
		LW12	07/30/92	S	1,3,5-Trinitrobenzene	87.42			9.220	8.060	UGG
		LW12	07/30/92	S	2,4,6-Trinitrotoluene	88.09			1.100	0.969	UGG
		LW12	07/30/92	S	2,4,6-Trinitrotoluene	93.75			8.800	8.250	UGG
		LW12	07/30/92	S	2,4,6-Trinitrotoluene	96.70			8.800	8.510	UGG
		LW12	07/30/92	S	2,4-Dinitrotoluene	84.93			1.230	1.040	UGG
		LW12	07/30/92	S	2,4-Dinitrotoluene	84.15			9.840	8.280	UGG
		LW12	07/30/92	S	2,4-Dinitrotoluene	84.35			9.840	8.380	UGG
		LW12	07/30/92	S	2-Nitrotoluene (TIC)	91.13			0.530	0.483	UGG
		LW12	07/30/92	S	2-Nitrotoluene (TIC)	89.91			22.800	20.500	UGG
		LW12	07/30/92	S	2-Nitrotoluene (TIC)	91.67			22.800	20.900	UGG
		LW12	07/30/92	S	2-Nitrotoluene (TIC)	95.61			45.600	43.600	UGG
		LW12	07/30/92	S	Nitrobenzene	91.18			3.060	2.790	UGG
		LW12	07/30/92	S	Nitrobenzene	89.80			24.500	22.000	UGG
		LW12	07/30/92	S	Nitrobenzene	90.61			24.500	22.200	UGG
		LW12	07/30/92	S	Cyclonite (RDX)	93.64			1.100	1.030	UGG
		LW12	07/30/92	S	Cyclonite (RDX)	85.89			8.790	7.550	UGG
		LW12	07/30/92	S	Cyclonite (RDX)	88.74			8.790	7.800	UGG
ES	ZHT	LW12	07/31/92	S	1,3,5-Trinitrobenzene	78.61			1.150	0.904	UGG
		LW12	07/31/92	S	1,3,5-Trinitrobenzene	88.18			9.220	8.130	UGG
		LW12	07/31/92	S	1,3,5-Trinitrobenzene	93.17			9.220	8.590	UGG
		LW12	07/31/92	S	2,4,6-Trinitrotoluene	87.73			1.100	0.965	UGG
		LW12	07/31/92	S	2,4,6-Trinitrotoluene	98.64			8.800	8.680	UGG
		LW12	07/31/92	S	2,4,6-Trinitrotoluene	99.35			8.800	8.760	UGG
		LW12	07/31/92	S	2,4-Dinitrotoluene	83.74			1.230	1.030	UGG
		LW12	07/31/92	S	2,4-Dinitrotoluene	92.17			9.840	9.070	UGG
		LW12	07/31/92	S	2,4-Dinitrotoluene	92.48			9.840	9.180	UGG
		LW12	07/31/92	S	2-Nitrotoluene (TIC)	85.28			0.530	0.452	UGG
		LW12	07/31/92	S	2-Nitrotoluene (TIC)	96.49			22.800	22.000	UGG
		LW12	07/31/92	S	2-Nitrotoluene (TIC)	96.93			22.800	22.100	UGG
		LW12	07/31/92	S	2-Nitrotoluene (TIC)	99.34			45.600	45.380	UGG
		LW12	07/31/92	S	Nitrobenzene	88.89			3.060	2.720	UGG
		LW12	07/31/92	S	Nitrobenzene	95.10			24.500	23.300	UGG
		LW12	07/31/92	S	Nitrobenzene	97.35			24.500	23.900	UGG
		LW12	07/31/92	S	Cyclonite (RDX)	71.18			1.100	0.783	UGG
		LW12	07/31/92	S	Cyclonite (RDX)	87.49			8.790	7.690	UGG
		LW12	07/31/92	S	Cyclonite (RDX)	87.49			8.790	7.690	UGG

Notes for Data Flags: 1 = Results less than CML but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

## APPENDIX C-10

Toxic-Watch Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Conc.	Recovered Conc.	Units
ES	ZWV	LU12	08/06/92	S	1,3,5-Trinitrobenzene	85.22			1.150	0.980	UGG
		LU12	08/06/92	S	1,3,5-Trinitrobenzene	84.06			9.220	7.750	UGG
		LU12	08/06/92	S	1,3,5-Trinitrobenzene	85.68			9.220	7.900	UGG
		LU12	08/06/92	S	2,4,6-Trinitrotoluene	91.82			1.100	1.010	UGG
		LU12	08/06/92	S	2,4,6-Trinitrotoluene	94.43			8.800	8.310	UGG
		LU12	08/06/92	S	2,4,6-Trinitrotoluene	94.43			8.800	8.310	UGG
		LU12	08/06/92	S	2,4-Dinitrotoluene	86.99			1.230	1.070	UGG
		LU12	08/06/92	S	2,4-Dinitrotoluene	88.11			9.840	8.670	UGG
		LU12	08/06/92	S	2,4-Dinitrotoluene	90.14			9.840	8.870	UGG
		LU12	08/06/92	S	2-Nitrotoluene (TIC)	81.13			0.530	0.430	UGG
		LU12	08/06/92	S	2-Nitrotoluene (TIC)	91.67			22.800	20.900	UGG
		LU12	08/06/92	S	2-Nitrotoluene (TIC)	94.30			22.800	21.500	UGG
		LU12	08/06/92	S	2-Nitrotoluene (TIC)	100.00			45.600	45.600	UGG
		LU12	08/06/92	S	Nitrobenzene	90.52			3.060	2.770	UGG
		LU12	08/06/92	S	Nitrobenzene	94.29			24.500	23.100	UGG
		LU12	08/06/92	S	Nitrobenzene	94.29			24.500	23.100	UGG
		LU12	08/06/92	S	Cyclanite (RMX)	71.36			1.100	0.785	UGG
		LU12	08/06/92	S	Cyclanite (RMX)	85.93			8.790	7.520	UGG
		LU12	08/06/92	S	Cyclanite (RMX)	88.28			8.790	7.760	UGG
ES	ZIX	LU12	07/29/92	S	1,3,5-Trinitrobenzene	88.78			1.150	0.929	UGG
		LU12	07/29/92	S	1,3,5-Trinitrobenzene	87.74			9.220	8.090	UGG
		LU12	07/29/92	S	1,3,5-Trinitrobenzene	88.29			9.220	8.140	UGG
		LU12	07/29/92	S	2,4,6-Trinitrotoluene	90.44			1.100	0.997	UGG
		LU12	07/29/92	S	2,4,6-Trinitrotoluene	97.84			8.800	8.610	UGG
		LU12	07/29/92	S	2,4,6-Trinitrotoluene	99.20			8.800	8.730	UGG
		LU12	07/29/92	S	2,4-Dinitrotoluene	86.18			1.230	1.060	UGG
		LU12	07/29/92	S	2,4-Dinitrotoluene	92.38			9.840	9.090	UGG
		LU12	07/29/92	S	2,4-Dinitrotoluene	92.38			9.840	9.090	UGG
		LU12	07/29/92	S	2-Nitrotoluene (TIC)	85.28			0.530	0.452	UGG
		LU12	07/29/92	S	2-Nitrotoluene (TIC)	90.35			22.800	20.600	UGG
		LU12	07/29/92	S	2-Nitrotoluene (TIC)	92.98			22.800	21.200	UGG
		LU12	07/29/92	S	2-Nitrotoluene (TIC)	96.95			45.600	44.200	UGG
		LU12	07/29/92	S	Nitrobenzene	90.88			3.060	2.780	UGG
		LU12	07/29/92	S	Nitrobenzene	97.95			24.500	23.900	UGG
		LU12	07/29/92	S	Nitrobenzene	97.96			24.500	24.800	UGG
		LU12	07/29/92	S	Cyclanite (RMX)	74.45			1.100	0.819	UGG
		LU12	07/29/92	S	Cyclanite (RMX)	88.74			8.790	7.800	UGG
		LU12	07/29/92	S	Cyclanite (RMX)	90.10			8.790	7.920	UGG
ES	ZIX2	LU12	08/05/92	S	1,3,5-Trinitrobenzene	49.48			1.150	0.569	UGG
		LU12	08/05/92	S	1,3,5-Trinitrobenzene	86.33			9.220	7.940	UGG
		LU12	08/05/92	S	1,3,5-Trinitrobenzene	86.88			9.220	8.010	UGG
		LU12	08/05/92	S	2,4,6-Trinitrotoluene	77.91			1.100	0.857	UGG
		LU12	08/05/92	S	2,4,6-Trinitrotoluene	95.80			8.800	8.430	UGG
		LU12	08/05/92	S	2,4,6-Trinitrotoluene	97.16			8.800	8.590	UGG
		LU12	08/05/92	S	2,4-Dinitrotoluene	78.21			1.230	0.962	UGG
		LU12	08/05/92	S	2,4-Dinitrotoluene	98.24			9.840	8.880	UGG
		LU12	08/05/92	S	2,4-Dinitrotoluene	98.24			9.840	8.880	UGG
		LU12	08/05/92	S	2-Nitrotoluene (TIC)	78.57			0.530	0.374	UGG
		LU12	08/05/92	S	2-Nitrotoluene (TIC)	98.48			22.800	22.900	UGG
		LU12	08/05/92	S	2-Nitrotoluene (TIC)	101.32			22.800	23.100	UGG

Notes for Data Flags: 1 = Results less than CIL but greater than CGL, 2 = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tecale-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concent.	Recovered Concent.	Units
ES	ZXZ	LW12	08/05/92	S	2-Nitrotoluene (TIC)	97.81			45.600	44.600	UGG
		LW12	08/11/92	S	Nitrobenzene	90.20			3.060	2.760	UGG
		LW12	08/05/92	S	Nitrobenzene	95.67	*		24.500	22.900	UGG
		LW12	08/05/92	S	Nitrobenzene	95.92	*		24.500	23.500	UGG
		LW12	08/11/92	S	Cyclonite (RDX)	74.45	*		1.100	0.819	UGG
		LW12	08/05/92	S	Cyclonite (RDX)	84.98			8.790	7.670	UGG
		LW12	08/05/92	S	Cyclonite (RDX)	89.42			8.790	7.860	UGG
ES	ZIC	JD19	07/11/92	S	Arsenic	131.85			0.496	0.654	UGG
		JD19	07/11/92	S	Arsenic	101.03			7.790	7.870	UGG
		JD19	07/11/92	S	Arsenic	102.39			7.940	8.130	UGG
ES	ZID	JD19	07/16/92	S	Arsenic	128.02			0.489	0.626	UGG
		JD19	07/16/92	S	Arsenic	108.52			7.510	8.150	UGG
		JD19	07/16/92	S	Arsenic	96.79			7.790	7.540	UGG
ES	ZIE	JD19	07/15/92	S	Arsenic	136.09			0.496	0.675	UGG
		JD19	07/15/92	S	Arsenic	106.96			7.620	8.150	UGG
		JD19	07/15/92	S	Arsenic	102.86			7.700	7.920	UGG
ES	ZIF	JD19	07/20/92	S	Arsenic	125.89			0.479	0.603	UGG
		JD19	07/20/92	S	Arsenic	106.75			7.700	8.220	UGG
		JD19	07/20/92	S	Arsenic	105.75			7.830	8.280	UGG
ES	ZIJ	JD19	07/17/92	S	Arsenic	129.85			0.469	0.609	UGG
		JD19	07/17/92	S	Arsenic	113.86			7.790	8.670	UGG
		JD19	07/17/92	S	Arsenic	114.16			7.840	8.950	UGG
ES	ZIL	JD19	07/29/92	S	Arsenic	133.89			0.481	0.644	UGG
		JD19	07/29/92	S	Arsenic	105.29			7.560	7.960	UGG
		JD19	07/29/92	S	Arsenic	109.51			7.570	8.290	UGG
ES	ZIM	JD19	08/08/92	S	Arsenic	128.01			0.482	0.617	UGG
		JD19	08/08/92	S	Arsenic	101.28			7.820	7.920	UGG
		JD19	08/08/92	S	Arsenic	103.14			7.930	8.200	UGG
ES	ZIP	JD19	08/10/92	S	Arsenic	123.74			0.476	0.589	UGG
		JD19	08/10/92	S	Arsenic	107.15			7.690	8.240	UGG
		JD19	08/10/92	S	Arsenic	112.17			7.970	8.940	UGG
ES	ZIO	JD19	08/17/92	S	Arsenic	126.67			0.491	0.619	UGG
		JD19	08/17/92	S	Arsenic	100.77			7.770	7.830	UGG
		JD19	08/17/92	S	Arsenic	101.93			7.790	7.940	UGG
ES	ZIR	JD19	08/18/92	S	Arsenic	126.12			0.490	0.618	UGG
		JD19	08/18/92	S	Arsenic	106.16			7.510	7.760	UGG
		JD19	08/18/92	S	Arsenic	106.65			7.520	8.020	UGG
ES	ZIV	JD19	08/20/92	S	Arsenic	137.98			0.495	0.683	UGG
		JD19	08/20/92	S	Arsenic	105.99			7.510	7.960	UGG
		JD19	08/20/92	S	Arsenic	107.27			7.570	8.120	UGG
ES	ZIY	JD19	09/15/92	S	Arsenic	127.66			0.499	0.620	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than COB, 2 = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

APPENDIX C-18

Tosco-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	Z1Y	J019	09/15/92	S	Arsenic	108.71			7.810	8.490	UGG
		J019	09/15/92	S	Arsenic	107.97			7.900	8.530	UGG
ES	Z1Z	J019	09/15/92	S	Arsenic	88.82			0.492	0.437	UGG
		J019	09/15/92	S	Arsenic	100.00			7.780	7.780	UGG
		J019	09/15/92	S	Arsenic	100.50			7.990	8.030	UGG
ES	Z1A	J016	06/29/92	S	Silver	85.73			0.799	0.685	UGG
		J016	06/29/92	S	Silver	97.62			7.980	7.790	UGG
		J016	06/29/92	S	Silver	94.75			8.000	7.580	UGG
		J016	06/29/92	S	Beryllium	100.40			4.990	5.010	UGG
		J016	06/29/92	S	Beryllium	99.80			49.900	49.400	UGG
		J016	06/29/92	S	Beryllium	98.40			50.000	49.200	UGG
		J016	06/29/92	S	Cadmium	100.20			4.990	5.000	UGG
		J016	06/29/92	S	Cadmium	94.99			49.900	47.400	UGG
		J016	06/29/92	S	Cadmium	93.80			50.000	46.900	UGG
		J016	06/29/92	S	Chromium	104.10			9.990	10.400	UGG
		J016	06/29/92	S	Chromium	95.69			99.800	95.500	UGG
		J016	06/29/92	S	Chromium	94.50			100.000	94.500	UGG
		J016	06/29/92	S	Copper	99.40			4.990	4.960	UGG
		J016	06/29/92	S	Copper	97.60			49.900	48.700	UGG
		J016	06/29/92	S	Copper	97.00			50.000	48.500	UGG
		J016	06/29/92	S	Nickel	99.40			4.990	4.960	UGG
		J016	06/29/92	S	Nickel	94.39			49.900	47.100	UGG
		J016	06/29/92	S	Nickel	94.20			50.000	47.100	UGG
		J016	06/29/92	S	Thallium	104.10			9.990	10.400	UGG
		J016	06/29/92	S	Thallium	96.09			99.800	95.900	UGG
		J016	06/29/92	S	Thallium	94.30			100.000	94.300	UGG
		J016	06/29/92	S	Zinc	96.60			9.990	9.650	UGG
		J016	06/29/92	S	Zinc	93.19			99.800	93.000	UGG
		J016	06/29/92	S	Zinc	93.00			100.000	93.000	UGG
ES	Z1B	J016	06/29/92	S	Silver	116.41			0.768	0.894	UGG
		J016	06/29/92	S	Silver	93.53			7.730	7.230	UGG
		J016	06/29/92	S	Silver	94.71			7.730	7.340	UGG
		J016	06/29/92	S	Beryllium	106.67			4.800	5.120	UGG
		J016	06/29/92	S	Beryllium	95.24			48.300	46.000	UGG
		J016	06/29/92	S	Beryllium	95.87			48.400	46.400	UGG
		J016	06/29/92	S	Cadmium	98.54			4.800	4.730	UGG
		J016	06/29/92	S	Cadmium	90.48			48.300	43.700	UGG
		J016	06/29/92	S	Cadmium	92.15			48.400	44.600	UGG
		J016	06/29/92	S	Chromium	102.50			9.600	9.840	UGG
		J016	06/29/92	S	Chromium	91.41			96.600	88.300	UGG
		J016	06/29/92	S	Chromium	91.53			96.800	88.600	UGG
		J016	06/29/92	S	Copper	100.00			4.800	4.800	UGG
		J016	06/29/92	S	Copper	93.17			48.300	45.000	UGG
		J016	06/29/92	S	Copper	93.60			48.400	45.300	UGG
		J016	06/29/92	S	Nickel	102.71			4.800	4.980	UGG
		J016	06/29/92	S	Nickel	88.82			48.300	42.900	UGG
		J016	06/29/92	S	Nickel	90.91			48.400	44.000	UGG
		J016	06/29/92	S	Thallium	86.46			9.600	8.300	UGG
		J016	06/29/92	S	Thallium	92.35			96.600	89.400	UGG
		J016	06/29/92	S	Thallium	88.95			96.800	86.100	UGG

Notes for Data Flags: 1 = Results less than GRL but greater than GDB, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.
ES	ZJB	JS16	06/29/92	S	Zinc	96.35			9.600	9.250
		JS16	06/29/92	S	Zinc	90.27			96.600	87.200
		JS16	06/29/92	S	Zinc	90.29			96.800	87.400
ES	ZJC	JS16	06/30/92	S	Silver	94.57			0.774	0.732
		JS16	06/30/92	S	Silver	92.28			7.510	6.930
		JS16	06/30/92	S	Silver	94.62			7.620	7.210
		JS16	06/30/92	S	Beryllium	101.03			4.840	4.890
		JS16	06/30/92	S	beryllium	96.60			47.000	45.400
		JS16	06/30/92	S	Beryllium	98.11			47.600	46.700
		JS16	06/30/92	S	Cadmium	96.90			4.840	4.690
		JS16	06/30/92	S	Cadmium	92.34			47.000	43.400
		JS16	06/30/92	S	Cadmium	93.91			47.600	44.700
		JS16	06/30/92	S	Chromium	99.17			9.670	9.590
		JS16	06/30/92	S	Chromium	91.59			93.900	86.000
		JS16	06/30/92	S	Chromium	93.60			95.300	89.200
		JS16	06/30/92	S	Copper	98.14			4.840	4.750
		JS16	06/30/92	S	Copper	94.47			47.000	44.400
		JS16	06/30/92	S	Copper	96.01			47.600	45.700
		JS16	06/30/92	S	Nickel	106.20			4.840	5.140
		JS16	06/30/92	S	Nickel	90.43			47.000	42.500
		JS16	06/30/92	S	Nickel	91.60			47.600	43.600
		JS16	06/30/92	S	Thallium	97.72			9.670	9.450
		JS16	06/30/92	S	Thallium	91.16			93.900	85.600
		JS16	06/30/92	S	Thallium	95.07			95.300	90.600
		JS16	06/30/92	S	Zinc	108.58			9.670	10.500
		JS16	06/30/92	S	Zinc	91.37			93.900	85.800
		JS16	06/30/92	S	Zinc	92.97			95.300	88.600
ES	ZJD	JS16	07/01/92	S	Silver	91.88			0.800	0.735
		JS16	07/01/92	S	Silver	91.60			7.980	7.310
		JS16	07/01/92	S	Silver	91.99			7.990	7.350
		JS16	07/01/92	S	Beryllium	103.60			5.000	5.180
		JS16	07/01/92	S	Beryllium	98.40			49.900	49.100
		JS16	07/01/92	S	Beryllium	99.00			49.900	49.400
		JS16	07/01/92	S	Cadmium	100.00			5.000	5.000
		JS16	07/01/92	S	Cadmium	94.99			49.900	47.400
		JS16	07/01/92	S	Cadmium	94.99			49.900	47.400
		JS16	07/01/92	S	Chromium	103.00			10.000	10.300
		JS16	07/01/92	S	Chromium	93.68			99.700	93.400
		JS16	07/01/92	S	Chromium	94.09			99.900	94.000
		JS16	07/01/92	S	Copper	97.80			5.000	4.890
		JS16	07/01/92	S	Copper	94.99			49.900	47.400
		JS16	07/01/92	S	Copper	95.19			49.900	47.500
		JS16	07/01/92	S	Nickel	90.60			5.000	4.530
		JS16	07/01/92	S	Nickel	90.78			49.900	45.300
		JS16	07/01/92	S	Nickel	92.18			49.900	44.000
		JS16	07/01/92	S	Thallium	104.00			10.000	10.400
		JS16	07/01/92	S	Thallium	94.18			99.700	93.900
		JS16	07/01/92	S	Thallium	97.20			99.900	97.100
		JS16	07/01/92	S	Zinc	119.00			10.000	11.900
		JS16	07/01/92	S	Zinc	95.19			99.700	94.900
		JS16	07/01/92	S	Zinc	96.10			99.900	96.800

Notes for Data Flags: 1 = Results less than CRL but greater than COD, R = Analyte required for reporting purposes but not certified, X = Analyte recovery outside of certified range but within acceptable limits

Tosco-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZJF	JS16	07/02/92	S	Silver	88.38			0.800	0.707	UGG
		JS16	07/02/92	S	Silver	92.61			7.980	7.390	UGG
		JS16	07/02/92	S	Silver	94.62			7.990	7.560	UGG
		JS16	07/02/92	S	Beryllium	101.20			5.000	5.060	UGG
		JS16	07/02/92	S	Beryllium	95.59			49.900	47.700	UGG
		JS16	07/02/92	S	Beryllium	96.80			50.000	48.400	UGG
		JS16	07/02/92	S	Cadmium	98.20			5.000	4.910	UGG
		JS16	07/02/92	S	Cadmium	91.58			49.900	45.700	UGG
		JS16	07/02/92	S	Cadmium	92.40			50.000	46.200	UGG
		JS16	07/02/92	S	Chromium	98.00			10.000	9.800	UGG
		JS16	07/02/92	S	Chromium	91.48			99.800	91.500	UGG
		JS16	07/02/92	S	Chromium	92.69			99.900	92.600	UGG
		JS16	07/02/92	S	Copper	93.40			5.000	4.670	UGG
		JS16	07/02/92	S	Copper	93.99			49.900	46.900	UGG
		JS16	07/02/92	S	Copper	95.00			50.000	47.500	UGG
		JS16	07/02/92	S	Nickel	101.60			5.000	5.080	UGG
		JS16	07/02/92	S	Nickel	90.38			49.900	45.100	UGG
		JS16	07/02/92	S	Nickel	91.40			50.000	45.700	UGG
		JS16	07/02/92	S	Thallium	115.00			10.000	11.500	UGG
		JS16	07/02/92	S	Thallium	93.89			99.800	93.700	UGG
		JS16	07/02/92	S	Thallium	92.19			99.900	92.100	UGG
		JS16	07/02/92	S	Zinc	102.00			10.000	10.200	UGG
		JS16	07/02/92	S	Zinc	91.48			99.800	91.300	UGG
		JS16	07/02/92	S	Zinc	92.69			99.900	92.600	UGG
ES	ZJH	JS16	07/09/92	S	Silver	104.76			0.798	0.836	UGG
		JS16	07/09/92	S	Silver	96.12			7.990	7.680	UGG
		JS16	07/09/92	S	Silver	96.25			8.000	7.700	UGG
		JS16	07/09/92	S	Beryllium	105.41			4.990	5.260	UGG
		JS16	07/09/92	S	Beryllium	99.00			49.900	49.400	UGG
		JS16	07/09/92	S	Beryllium	100.60			50.000	50.300	UGG
		JS16	07/09/92	S	Cadmium	101.20			4.990	5.050	UGG
		JS16	07/09/92	S	Cadmium	94.19			49.900	47.000	UGG
		JS16	07/09/92	S	Cadmium	96.20			50.000	48.100	UGG
		JS16	07/09/92	S	Chromium	103.21			9.980	10.300	UGG
		JS16	07/09/92	S	Chromium	94.39			99.900	94.300	UGG
		JS16	07/09/92	S	Chromium	96.60			100.000	96.600	UGG
		JS16	07/09/92	S	Copper	110.82			4.990	5.530	UGG
		JS16	07/09/92	S	Copper	96.79			49.900	48.300	UGG
		JS16	07/09/92	S	Copper	99.40			50.000	49.700	UGG
		JS16	07/09/92	S	Nickel	89.38			4.990	4.460	UGG
		JS16	07/09/92	S	Nickel	90.78			49.900	45.300	UGG
		JS16	07/09/92	S	Nickel	92.80			50.000	46.400	UGG
		JS16	07/09/92	S	Thallium	104.21			9.980	10.480	UGG
		JS16	07/09/92	S	Thallium	93.79			99.900	93.780	UGG
		JS16	07/09/92	S	Thallium	96.40			100.000	96.400	UGG
		JS16	07/09/92	S	Zinc	126.25			9.980	12.600	UGG
		JS16	07/09/92	S	Zinc	95.10			99.900	95.800	UGG
		JS16	07/09/92	S	Zinc	107.80			100.000	107.000	UGG
ES	ZJI	JS16	07/14/92	S	Silver	91.61			0.799	0.732	UGG
		JS16	07/14/92	S	Silver	94.36			7.880	7.348	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than COD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tecale-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZJI	JS16	07/14/92	S	Silver	94.27			7.860	7.410	UGG
		JS16	07/14/92	S	Beryllium	110.42			4.990	5.510	UGG
		JS16	07/14/92	S	Beryllium	101.43			48.800	49.500	UGG
		JS16	07/14/92	S	Beryllium	99.59			49.100	48.900	UGG
		JS16	07/14/92	S	Cadmium	100.00			4.990	4.990	UGG
		JS16	07/14/92	S	Cadmium	96.11			48.800	46.900	UGG
		JS16	07/14/92	S	Cadmium	94.50			49.100	46.400	UGG
		JS16	07/14/92	S	Chromium	97.39			9.980	9.720	UGG
		JS16	07/14/92	S	Chromium	95.59			97.500	93.200	UGG
		JS16	07/14/92	S	Chromium	93.39			98.300	91.800	UGG
		JS16	07/14/92	S	Copper	98.40			4.990	4.910	UGG
		JS16	07/14/92	S	Copper	99.18			48.800	48.400	UGG
		JS16	07/14/92	S	Copper	97.35			49.100	47.800	UGG
		JS16	07/14/92	S	Nickel	91.58			4.990	4.570	UGG
		JS16	07/14/92	S	Nickel	94.47			48.800	46.100	UGG
		JS16	07/14/92	S	Nickel	91.85			49.100	45.100	UGG
		JS16	07/14/92	S	Thallium	112.22			9.980	11.200	UGG
		JS16	07/14/92	S	Thallium	92.82			97.500	90.500	UGG
		JS16	07/14/92	S	Thallium	90.95			98.300	89.400	UGG
		JS16	07/14/92	S	Zinc	120.24			9.980	12.000	UGG
		JS16	07/14/92	S	Zinc	95.90			97.500	93.500	UGG
		JS16	07/14/92	S	Zinc	94.20			98.300	92.600	UGG
Eb	ZJK	JS16	07/14/92	S	Silver	108.90			0.798	0.869	UGG
		JS16	07/14/92	S	Silver	94.36			7.980	7.530	UGG
		JS16	07/14/92	S	Silver	95.13			8.000	7.610	UGG
		JS16	07/14/92	S	Beryllium	104.01			4.990	5.190	UGG
		JS16	07/14/92	S	Beryllium	98.00			49.900	48.900	UGG
		JS16	07/14/92	S	Beryllium	98.40			50.000	49.200	UGG
		JS16	07/14/92	S	Cadmium	101.80			4.990	5.080	UGG
		JS16	07/14/92	S	Cadmium	94.19			49.900	47.000	UGG
		JS16	07/14/92	S	Cadmium	93.80			50.000	46.900	UGG
		JS16	07/14/92	S	Chromium	103.31			9.970	10.300	UGG
		JS16	07/14/92	S	Chromium	93.29			99.800	93.100	UGG
		JS16	07/14/92	S	Chromium	93.40			100.000	93.400	UGG
		JS16	07/14/92	S	Copper	93.19			4.990	4.650	UGG
		JS16	07/14/92	S	Copper	95.19			49.900	47.500	UGG
		JS16	07/14/92	S	Copper	95.40			50.000	47.700	UGG
		JS16	07/14/92	S	Nickel	97.60			4.990	4.870	UGG
		JS16	07/14/92	S	Nickel	92.38			49.900	46.100	UGG
		JS16	07/14/92	S	Nickel	92.80			50.000	46.400	UGG
		JS16	07/14/92	S	Thallium	98.80			9.970	9.850	UGG
		JS16	07/14/92	S	Thallium	95.59			99.800	93.400	UGG
		JS16	07/14/92	S	Thallium	93.60			100.000	93.600	UGG
ES	ZJL	JS16	07/15/92	S	Silver	111.26			0.799	0.889	UGG
		JS16	07/15/92	S	Silver	98.11			7.930	7.780	UGG
		JS16	07/15/92	S	Silver	97.99			7.930	7.790	UGG
		JS16	07/15/92	S	Beryllium	104.80			5.000	5.240	UGG
		JS16	07/15/92	S	Beryllium	100.40			49.600	49.800	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than LOD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tennie-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Conc.	Recovered Conc.	Units
ES	ZJL	JS16	07/15/92	S	Beryllium	102.01			49.700	50.700	UGG
		JS16	07/15/92	S	Cadmium	103.40			5.000	5.170	UGG
		JS16	07/15/92	S	Cadmium	96.57			49.600	47.900	UGG
		JS16	07/15/92	S	Cadmium	97.99			49.700	48.500	UGG
		JS16	07/15/92	S	Chromium	113.11			9.990	11.300	UGG
		JS16	07/15/92	S	Chromium	95.26			99.100	96.400	UGG
		JS16	07/15/92	S	Chromium	96.48			99.400	95.900	UGG
		JS16	07/15/92	S	Copper	104.60			5.000	5.230	UGG
		JS16	07/15/92	S	Copper	97.78			49.600	48.500	UGG
		JS16	07/15/92	S	Copper	99.80			49.700	49.600	UGG
		JS16	07/15/92	S	Nickel	107.80			5.000	5.390	UGG
		JS16	07/15/92	S	Nickel	93.15			49.600	46.200	UGG
		JS16	07/15/92	S	Nickel	94.97			49.700	47.200	UGG
		JS16	07/15/92	S	Thallium	126.13			9.990	12.600	UGG
		JS16	07/15/92	S	Thallium	97.78			99.100	96.900	UGG
		JS16	07/15/92	S	Thallium	97.18			99.600	96.600	UGG
		JS16	07/15/92	S	Zinc	116.12			9.990	11.600	UGG
		JS16	07/15/92	S	Zinc	93.74			99.100	92.900	UGG
		JS16	07/15/92	S	Zinc	94.67			99.600	94.100	UGG
ES	ZJM	JS16	07/17/92	S	Silver	111.13			0.800	0.889	UGG
		JS16	07/17/92	S	Silver	95.12			7.990	7.600	UGG
		JS16	07/17/92	S	Silver	95.00			8.000	7.600	UGG
		JS16	07/17/92	S	Beryllium	102.40			5.000	5.120	UGG
		JS16	07/17/92	S	Beryllium	99.20			50.000	49.600	UGG
		JS16	07/17/92	S	Beryllium	99.40			50.000	49.700	UGG
		JS16	07/17/92	S	Cadmium	101.80			5.000	5.090	UGG
		JS16	07/17/92	S	Cadmium	95.80			50.000	47.900	UGG
		JS16	07/17/92	S	Cadmium	96.20			50.000	48.100	UGG
		JS16	07/17/92	S	Chromium	106.00			10.000	10.600	UGG
		JS16	07/17/92	S	Chromium	93.99			99.900	93.500	UGG
		JS16	07/17/92	S	Chromium	93.10			100.000	93.100	UGG
		JS16	07/17/92	S	Copper	93.20			5.000	4.660	UGG
		JS16	07/17/92	S	Copper	95.60			50.000	47.800	UGG
		JS16	07/17/92	S	Copper	95.80			50.000	47.900	UGG
		JS16	07/17/92	S	Nickel	96.80			5.000	4.840	UGG
		JS16	07/17/92	S	Nickel	89.60			50.000	44.800	UGG
		JS16	07/17/92	S	Nickel	92.40			50.000	46.200	UGG
		JS16	07/17/92	S	Thallium	85.90			10.000	8.590	UGG
		JS16	07/17/92	S	Thallium	99.40			99.900	99.300	UGG
		JS16	07/17/92	S	Thallium	95.40			100.000	95.400	UGG
		JS16	07/17/92	S	Zinc	107.00			10.000	10.700	UGG
		JS16	07/17/92	S	Zinc	93.29			99.900	93.200	UGG
		JS16	07/17/92	S	Zinc	93.60			100.000	93.600	UGG
ES	ZJO	JS16	07/24/92	S	Silver	103.32			0.783	0.809	UGG
		JS16	07/24/92	S	Silver	90.45			7.730	7.010	UGG
		JS16	07/24/92	S	Silver	92.23			7.980	7.340	UGG
		JS16	07/24/92	S	Beryllium	103.89			4.890	5.880	UGG
		JS16	07/24/92	S	Beryllium	96.69			48.400	46.800	UGG
		JS16	07/24/92	S	Beryllium	97.80			49.900	48.800	UGG
		JS16	07/24/92	S	Cadmium	100.41			4.890	4.910	UGG
		JS16	07/24/92	S	Cadmium	92.77			48.400	44.900	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CGL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits



Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZJQ	JS16	07/24/92	S	Cadmium	94.39			49.900	47.100	UGG
		JS16	07/24/92	S	Chromium	103.27			9.780	10.100	UGG
		JS16	07/24/92	S	Chromium	92.36			96.900	89.500	UGG
		JS16	07/24/92	S	Chromium	93.69			99.800	93.500	UGG
		JS16	07/24/92	S	Copper	99.59			4.890	4.870	UGG
		JS16	07/24/92	S	Copper	94.63			48.400	43.800	UGG
		JS16	07/24/92	S	Copper	96.39			49.900	48.100	UGG
		JS16	07/24/92	S	Nickel	106.13			4.890	5.190	UGG
		JS16	07/24/92	S	Nickel	93.18			48.400	43.100	UGG
		JS16	07/24/92	S	Nickel	90.78			49.900	45.300	UGG
		JS16	07/24/92	S	Thallium	118.61			9.780	11.600	UGG
		JS16	07/24/92	S	Thallium	95.77			96.900	92.800	UGG
		JS16	07/24/92	S	Thallium	96.89			99.800	96.700	UGG
		JS16	07/24/92	S	Zinc	123.72			9.780	12.100	UGG
		JS16	07/24/92	S	Zinc	93.09			96.900	90.200	UGG
		JS16	07/24/92	S	Zinc	96.39			99.800	96.200	UGG
ES	ZJS	JS16	07/31/92	S	Silver	77.09			0.790	0.609	UGG
		JS16	07/31/92	S	Silver	94.82			7.910	7.500	UGG
		JS16	07/31/92	S	Silver	95.00			8.000	7.600	UGG
		JS16	07/31/92	S	Beryllium	100.20			4.940	4.950	UGG
		JS16	07/31/92	S	Beryllium	98.99			49.400	48.900	UGG
		JS16	07/31/92	S	Beryllium	98.00			50.000	49.000	UGG
		JS16	07/31/92	S	Cadmium	96.96			4.940	4.790	UGG
		JS16	07/31/92	S	Cadmium	94.74			49.400	46.800	UGG
		JS16	07/31/92	S	Cadmium	93.80			50.000	46.900	UGG
		JS16	07/31/92	S	Chromium	106.28			9.880	10.500	UGG
		JS16	07/31/92	S	Chromium	93.55			98.800	94.400	UGG
		JS16	07/31/92	S	Chromium	95.40			100.000	95.400	UGG
		JS16	07/31/92	S	Copper	95.95			4.940	4.740	UGG
		JS16	07/31/92	S	Copper	98.58			49.400	48.700	UGG
		JS16	07/31/92	S	Copper	97.00			50.000	48.500	UGG
		JS16	07/31/92	S	Nickel	97.17			4.940	4.800	UGG
		JS16	07/31/92	S	Nickel	93.12			49.400	46.000	UGG
		JS16	07/31/92	S	Nickel	92.80			50.000	46.400	UGG
		JS16	07/31/92	S	Thallium	126.52			9.880	12.500	UGG
		JS16	07/31/92	S	Thallium	100.20			98.800	99.000	UGG
		JS16	07/31/92	S	Thallium	104.00			100.000	104.000	UGG
		JS16	07/31/92	S	Zinc	88.97			9.880	8.790	UGG
		JS16	07/31/92	S	Zinc	94.23			98.800	93.100	UGG
		JS16	07/31/92	S	Zinc	93.60			100.000	93.600	UGG
ES	ZJT	JS16	08/03/92	S	Silver	105.33			0.769	0.810	UGG
		JS16	08/03/92	S	Silver	89.96			7.970	7.170	UGG
		JS16	08/03/92	S	Silver	94.74			7.980	7.540	UGG
		JS16	08/03/92	S	Beryllium	101.44			4.810	4.880	UGG
		JS16	08/03/92	S	Beryllium	98.59			49.800	49.100	UGG
		JS16	08/03/92	S	Beryllium	99.80			49.800	49.300	UGG
		JS16	08/03/92	S	Cadmium	99.79			4.810	4.880	UGG
		JS16	08/03/92	S	Cadmium	94.78			49.800	47.200	UGG
		JS16	08/03/92	S	Cadmium	94.98			49.800	47.300	UGG
		JS16	08/03/92	S	Chromium	99.17			9.610	9.330	UGG
		JS16	08/03/92	S	Chromium	94.78			99.800	94.400	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

# APPENDIX C-15

## Tecoma-North Phase I RFI Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concent.	Recovered Concent.	Unit:
ES	ZJT	JS16	08/03/92	S	Chromium	94.08			99.700	93.800	UG
		JS16	08/03/92	S	Copper	92.93			4.810	4.470	UG
		JS16	08/03/92	S	Copper	93.98			49.800	47.800	UG
		JS16	08/03/92	S	Copper	96.99			49.800	48.100	UG
		JS16	08/03/92	S	Nickel	93.43			4.810	4.990	UG
		JS16	08/03/92	S	Nickel	92.77			49.800	46.200	UG
		JS16	08/03/92	S	Nickel	93.98			49.800	46.800	UG
		JS16	08/03/92	S	Thallium	91.05			9.610	8.750	UG
		JS16	08/03/92	S	Thallium	92.07			99.600	91.700	UG
		JS16	08/03/92	S	Thallium	92.68			99.700	92.400	UG
		JS16	08/03/92	S	Zinc	86.16			9.610	8.200	UG
		JS16	08/03/92	S	Zinc	92.27			99.600	91.900	UG
		JS16	08/03/92	S	Zinc	92.78			99.700	92.500	UG
ES	ZJU	JS16	08/06/92	S	Silver	120.93			0.798	0.965	UG
		JS16	08/06/92	S	Silver	93.72			7.960	7.460	UG
		JS16	08/06/92	S	Silver	92.61			7.980	7.390	UG
		JS16	08/06/92	S	Beryllium	102.40			4.990	5.110	UG
		JS16	08/06/92	S	Beryllium	99.00			49.800	49.300	UG
		JS16	08/06/92	S	Beryllium	97.60			49.900	48.700	UG
		JS16	08/06/92	S	Cadmium	100.60			4.990	5.820	UG
		JS16	08/06/92	S	Cadmium	94.38			49.800	47.000	UG
		JS16	08/06/92	S	Cadmium	93.59			49.900	46.700	UG
		JS16	08/06/92	S	Chromium	99.30			9.970	9.900	UG
		JS16	08/06/92	S	Chromium	93.67			99.500	93.200	UG
		JS16	08/06/92	S	Chromium	92.08			99.800	91.900	UG
		JS16	08/06/92	S	Copper	100.00			4.990	4.990	UG
		JS16	08/06/92	S	Copper	95.58			49.800	47.600	UG
		JS16	08/06/92	S	Copper	94.79			49.900	47.300	UG
		JS16	08/06/92	S	Nickel	105.21			4.990	5.250	UG
		JS16	08/06/92	S	Nickel	90.96			49.800	45.300	UG
		JS16	08/06/92	S	Nickel	89.78			49.900	44.800	UG
		JS16	08/06/92	S	Thallium	122.37			9.970	12.200	UG
		JS16	08/06/92	S	Thallium	92.26			99.500	91.800	UG
		JS16	08/06/92	S	Thallium	93.59			99.800	93.400	UG
		JS16	08/06/92	S	Zinc	133.40			9.970	13.300	UG
		JS16	08/06/92	S	Zinc	95.58			99.500	95.100	UG
		JS16	08/06/92	S	Zinc	94.49			99.800	94.300	UG
ES	ZJU	JS16	08/18/92	S	Silver	106.40			0.797	0.848	UG
		JS16	08/18/92	S	Silver	93.18			7.670	7.300	UG
		JS16	08/18/92	S	Silver	96.29			7.820	7.530	UG
		JS16	08/18/92	S	Beryllium	108.83			4.980	5.380	UG
		JS16	08/18/92	S	Beryllium	98.34			47.900	47.200	UG
		JS16	08/18/92	S	Beryllium	98.77			48.900	48.300	UG
		JS16	08/18/92	S	Cadmium	100.00			4.980	4.980	UG
		JS16	08/18/92	S	Cadmium	94.36			47.900	43.200	UG
		JS16	08/18/92	S	Cadmium	94.68			48.900	44.300	UG
		JS16	08/18/92	S	Chromium	106.32			9.970	10.600	UG
		JS16	08/18/92	S	Chromium	89.99			95.900	86.300	UG
		JS16	08/18/92	S	Chromium	91.10			97.800	89.100	UG
		JS16	08/18/92	S	Copper	103.42			4.980	5.250	UG
		JS16	08/18/92	S	Copper	93.28			47.900	43.600	UG

Notes for Data Flags: I = Results less than CRL but greater than LOD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tessie-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Conc.	Recovered Conc.	Units
ES	ZAJ	JS16	08/18/92	S	Copper	95.91			48.900	46.900	UGG
		JS16	08/18/92	S	Nickel	103.21			4.900	5.140	UGG
		JS16	08/18/92	S	Nickel	89.98			47.900	43.100	UGG
		JS16	08/18/92	S	Nickel	93.05			48.900	45.500	UGG
		JS16	08/18/92	S	Thallium	104.31			9.970	10.400	UGG
		JS16	08/18/92	S	Thallium	89.78			95.900	86.100	UGG
		JS16	08/18/92	S	Thallium	91.31			97.800	89.300	UGG
		JS16	08/18/92	S	Zinc	136.41			9.970	13.600	UGG
		JS16	08/18/92	S	Zinc	93.95			95.900	90.100	UGG
		JS16	08/18/92	S	Zinc	94.89			97.800	92.800	UGG
ES	ZJX	JS16	08/21/92	S	Silver	101.01			0.794	0.802	UGG
		JS16	08/21/92	S	Silver	94.19			7.920	7.460	UGG
		JS16	08/21/92	S	Silver	94.07			7.930	7.460	UGG
		JS16	08/21/92	S	Beryllium	102.42			4.960	5.080	UGG
		JS16	08/21/92	S	Beryllium	98.38			49.500	48.700	UGG
		JS16	08/21/92	S	Beryllium	99.19			49.500	49.100	UGG
		JS16	08/21/92	S	Cadmium	94.15			4.960	4.670	UGG
		JS16	08/21/92	S	Cadmium	93.94			49.500	46.500	UGG
		JS16	08/21/92	S	Cadmium	94.35			49.500	46.800	UGG
		JS16	08/21/92	S	Chromium	106.75			9.930	10.600	UGG
		JS16	08/21/92	S	Chromium	94.85			99.000	93.900	UGG
		JS16	08/21/92	S	Chromium	95.16			99.100	94.300	UGG
		JS16	08/21/92	S	Copper	99.60			4.960	4.940	UGG
		JS16	08/21/92	S	Copper	97.58			49.500	48.300	UGG
		JS16	08/21/92	S	Copper	97.98			49.500	48.500	UGG
		JS16	08/21/92	S	Nickel	101.41			4.960	5.030	UGG
		JS16	08/21/92	S	Nickel	92.53			49.500	45.800	UGG
		JS16	08/21/92	S	Nickel	92.93			49.500	46.000	UGG
		JS16	08/21/92	S	Thallium	115.81			9.930	11.500	UGG
		JS16	08/21/92	S	Thallium	94.55			99.000	93.600	UGG
		JS16	08/21/92	S	Thallium	94.05			99.100	93.200	UGG
		JS16	08/21/92	S	Zinc	120.85			9.930	12.000	UGG
		JS16	08/21/92	S	Zinc	95.86			99.000	94.900	UGG
		JS16	08/21/92	S	Zinc	94.85			99.100	94.000	UGG
ES	ZKB	SD09	07/10/92	S	Thallium	107.00			10.000	10.700	UGL
		SD09	07/10/92	S	Thallium	100.50			20.000	20.100	UGL
		SD09	07/10/92	S	Thallium	104.50			20.000	20.900	UGL
ES	ZKC	SD09	07/23/92	S	Thallium	101.00			10.000	10.100	UGL
		SD09	07/23/92	S	Thallium	102.50			20.000	20.500	UGL
		SD09	07/23/92	S	Thallium	105.00			20.000	21.000	UGL
ES	ZKF	SD09	08/21/92	S	Thallium	94.00			10.000	9.400	UGL
		SD09	08/21/92	S	Thallium	100.50			20.000	20.100	UGL
		SD09	08/21/92	S	Thallium	105.50			20.000	21.100	UGL
ES	ZKI	SD09	08/13/92	S	Thallium	106.00			10.000	10.600	UGL
		SD09	08/13/92	S	Thallium	109.50			20.000	21.900	UGL
		SD09	08/13/92	S	Thallium	110.00			20.000	22.000	UGL
ES	ZKL	SD09	09/02/92	S	Thallium	102.00			10.000	10.200	UGL

Notes: - or Data Flags: 1 = Results less than CRL but greater than COB, R = Analyte reported for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

APPENDIX C-10

Tosco-Walsh Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (X)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZKL	SD09	09/02/92	S	Thallium	91.00			20.000	18.200	UGL
		SD09	09/02/92	S	Thallium	92.50			20.000	18.500	UGL
ES	ZKN	SD09	08/13/92	S	Thallium	103.00			10.000	10.300	UGL
		SD09	08/13/92	S	Thallium	103.50			20.000	20.700	UGL
		SD09	08/13/92	S	Thallium	107.50			20.000	21.500	UGL
ES	ZNB	LM18	07/08/92	S	2,4,6-Tribromophenol	92.54			6.700	6.200	UGG
		LM18	07/08/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		LM18	07/08/92	S	2-Fluorophenol	83.58			6.700	5.600	UGG
		LM18	07/08/92	S	Nitrobenzene-D5	84.85			3.300	2.800	UGG
		LM18	07/08/92	S	Phenol-D6	85.07			6.700	5.700	UGG
		LM18	07/08/92	S	Terphenyl-D14	103.03			3.300	3.400	UGG
ES	ZNC	LM18	07/12/92	S	2,4,6-Tribromophenol	88.06			6.700	5.900	UGG
		LM18	07/12/92	S	2-Fluorobiphenyl	96.97			3.300	3.200	UGG
		LM18	07/12/92	S	2-Fluorophenol	83.58			6.700	5.600	UGG
		LM18	07/12/92	S	Nitrobenzene-D5	96.97			3.300	3.200	UGG
		LM18	07/12/92	S	Phenol-D6	91.04			6.700	6.100	UGG
		LM18	07/12/92	S	Terphenyl-D14	100.00			3.300	3.300	UGG
ES	ZND	99	07/14/92	S	2,4,6-Tribromophenol	82.09			6.700	5.500	UGG
		99	07/14/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		99	07/14/92	S	2-Fluorophenol	77.61			6.700	5.200	UGG
		99	07/14/92	S	Nitrobenzene-D5	81.82			3.300	2.700	UGG
		99	07/14/92	S	Phenol-D6	83.58			6.700	5.600	UGG
		99	07/14/92	S	Terphenyl-D14	103.03			3.300	3.400	UGG
ES	ZNE	LM18	07/01/92	S	2,4,6-Tribromophenol	70.15			6.700	4.700	UGG
		LM18	07/01/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		LM18	07/01/92	S	2-Fluorophenol	71.64			6.700	4.800	UGG
		LM18	07/01/92	S	Nitrobenzene-D5	72.73			3.300	2.400	UGG
		LM18	07/01/92	S	Phenol-D6	74.63			6.700	5.000	UGG
		LM18	07/01/92	S	Terphenyl-D14	90.91			3.300	3.000	UGG
ES	ZNG	LM18	07/15/92	S	2,4,6-Tribromophenol	83.58			6.700	5.600	UGG
		LM18	07/15/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		LM18	07/15/92	S	2-Fluorophenol	83.58			6.700	5.600	UGG
		LM18	07/15/92	S	Nitrobenzene-D5	87.88			3.300	2.900	UGG
		LM18	07/15/92	S	Phenol-D6	92.34			6.700	6.200	UGG
		LM18	07/15/92	S	Terphenyl-D14	115.13			3.300	3.800	UGG
ES	ZNH	LM18	07/16/92	S	2,4,6-Tribromophenol	82.09			6.700	5.500	UGG
		LM18	07/16/92	S	2-Fluorobiphenyl	90.91			3.300	3.000	UGG
		LM18	07/16/92	S	2-Fluorophenol	80.60			6.700	5.400	UGG
		LM18	07/16/92	S	Nitrobenzene-D5	81.82			3.300	2.700	UGG
		LM18	07/16/92	S	Phenol-D6	88.06			6.700	5.900	UGG
		LM18	07/16/92	S	Terphenyl-D14	93.94			3.300	3.100	UGG
ES	ZNL	LM18	07/19/92	S	2,4,6-Tribromophenol	70.15			6.700	4.700	UGG
		LM18	07/19/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		LM18	07/19/92	S	2-Fluorophenol	73.13			6.700	4.900	UGG
		LM18	07/19/92	S	Nitrobenzene-D5	69.70			3.300	2.300	UGG

Notes for Data Flags: I = Results less than CRL but greater than LOD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tosco-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZMJ	LM18	07/19/92	S	Phenol-06	68.66			6.700	4.600	UGG
		LM18	07/19/92	S	Terphenyl-014	106.06			3.300	3.500	UGG
ES	ZMK	LM18	07/21/92	S	2,4,6-Tribromophenol	98.51			6.700	6.600	UGG
		LM18	07/21/92	S	2-Fluorobiphenyl	84.85			3.300	2.800	UGG
		LM18	07/21/92	S	2-Fluorophenol	91.04			6.700	6.100	UGG
		LM18	07/21/92	S	Nitrobenzene-05	87.88			3.300	2.900	UGG
		LM18	07/21/92	S	Phenol-06	85.07			6.700	5.700	UGG
		LM18	07/21/92	S	Terphenyl-014	93.94			3.300	3.100	UGG
ES	ZMM	LM18	07/23/92	S	2,4,6-Tribromophenol	98.51			6.700	6.600	UGG
		LM18	07/23/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		LM18	07/23/92	S	2-Fluorophenol	79.10			6.700	5.300	UGG
		LM18	07/23/92	S	Nitrobenzene-05	87.88			3.300	2.900	UGG
		LM18	07/23/92	S	Phenol-06	88.06			6.700	5.900	UGG
		LM18	07/23/92	S	Terphenyl-014	112.12			3.300	3.700	UGG
ES	ZMO	LM18	07/24/92	S	2,4,6-Tribromophenol	89.93			6.700	6.000	UGG
		LM18	07/24/92	S	2-Fluorobiphenyl	90.91			3.300	3.000	UGG
		LM18	07/24/92	S	2-Fluorophenol	92.54			6.700	6.200	UGG
		LM18	07/24/92	S	Nitrobenzene-05	100.00			3.300	3.300	UGG
		LM18	07/24/92	S	Phenol-06	97.01			6.700	6.300	UGG
		LM18	07/24/92	S	Terphenyl-014	96.97			3.300	3.200	UGG
ES	ZMP	99	07/24/92	S	2,4,6-Tribromophenol	88.06			6.700	5.900	UGG
		99	07/24/92	S	2-Fluorobiphenyl	87.88			3.300	2.900	UGG
		99	07/24/92	S	2-Fluorophenol	80.60			6.700	5.400	UGG
		99	07/24/92	S	Nitrobenzene-05	96.97			3.300	3.200	UGG
		99	07/24/92	S	Phenol-06	86.57			6.700	5.800	UGG
		99	07/24/92	S	Terphenyl-014	112.12			3.300	3.700	UGG
ES	ZMR	LM18	07/28/92	S	2,4,6-Tribromophenol	94.03			6.700	6.300	UGG
		LM18	07/28/92	S	2-Fluorobiphenyl	96.97			3.300	3.200	UGG
		LM18	07/28/92	S	2-Fluorophenol	77.61			6.700	5.200	UGG
		LM18	07/28/92	S	Nitrobenzene-05	98.91			3.300	3.000	UGG
		LM18	07/28/92	S	Phenol-06	88.06			6.700	5.900	UGG
		LM18	07/28/92	S	Terphenyl-014	109.09			3.300	3.600	UGG
ES	ZMT	LM18	07/29/92	S	2,4,6-Tribromophenol	82.09			6.700	5.500	UGG
		LM18	07/29/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		LM18	07/29/92	S	2-Fluorophenol	76.12			6.700	5.100	UGG
		LM18	07/29/92	S	Nitrobenzene-05	81.82			3.300	2.700	UGG
		LM18	07/29/92	S	Phenol-06	80.60			6.700	5.400	UGG
		LM18	07/29/92	S	Terphenyl-014	87.88			3.300	2.900	UGG
ES	ZMU	LM18	07/30/92	S	2,4,6-Tribromophenol	89.93			6.700	6.000	UGG
		LM18	07/30/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		LM18	07/30/92	S	2-Fluorophenol	86.57			6.700	5.800	UGG
		LM18	07/30/92	S	Nitrobenzene-05	84.85			3.300	2.800	UGG
		LM18	07/30/92	S	Phenol-06	92.54			6.700	6.200	UGG
		LM18	07/30/92	S	Terphenyl-014	121.21			3.300	4.800	UGG
ES	ZMV	LM18	07/31/92	S	2,4,6-Tribromophenol	98.51			6.700	6.600	UGG

Notes: \* or Data Flags: 1 = Results less than CRL but greater than CGL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tasite-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZIV	LN18	07/31/92	S	2-Fluorobiphenyl	96.97			3.300	3.200	UGG
		LN18	07/31/92	S	2-Fluorophenol	83.58			6.700	5.600	UGG
		LN18	07/31/92	S	Nitrobenzene-D5	87.88			3.300	2.900	UGG
		LN18	07/31/92	S	Phenol-D6	89.95			6.700	6.000	UGG
		LN18	07/31/92	S	Terphenyl-D14	118.18			3.300	3.900	UGG
ES	ZIW	LN18	08/04/92	S	2,4,6-Tribromophenol	91.04			6.700	6.100	UGG
		LN18	08/04/92	S	2-Fluorobiphenyl	84.85			3.300	2.800	UGG
		LN18	08/04/92	S	2-Fluorophenol	77.61			6.700	5.200	UGG
		LN18	08/04/92	S	Nitrobenzene-D5	90.91			3.300	3.000	UGG
		LN18	08/04/92	S	Phenol-D6	77.61			6.700	5.200	UGG
		LN18	08/04/92	S	Terphenyl-D14	75.76			3.300	2.500	UGG
ES	ZIX	LN18	08/03/92	S	2,4,6-Tribromophenol	94.03			6.700	6.300	UGG
		LN18	08/03/92	S	2-Fluorobiphenyl	90.91			3.300	3.000	UGG
		LN18	08/03/92	S	2-Fluorophenol	88.06			6.700	5.900	UGG
		LN18	08/03/92	S	Nitrobenzene-D5	93.94			3.300	3.100	UGG
		LN18	08/03/92	S	Phenol-D6	92.54			6.700	6.200	UGG
		LN18	08/03/92	S	Terphenyl-D14	103.03			3.300	3.400	UGG
ES	ZIY	LN18	08/05/92	S	2,4,6-Tribromophenol	85.07			6.700	5.700	UGG
		LN18	08/05/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		LN18	08/05/92	S	2-Fluorophenol	85.07			6.700	5.700	UGG
		LN18	08/05/92	S	Nitrobenzene-D5	84.85			3.300	2.800	UGG
		LN18	08/05/92	S	Phenol-D6	86.57			6.700	5.800	UGG
		LN18	08/05/92	S	Terphenyl-D14	106.06			3.300	3.500	UGG
ES	ZIZ	LN18	08/05/92	S	2,4,6-Tribromophenol	82.09			6.700	5.500	UGG
		LN18	08/05/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		LN18	08/05/92	S	2-Fluorophenol	80.60			6.700	5.400	UGG
		LN18	08/05/92	S	Nitrobenzene-D5	90.91			3.300	3.000	UGG
		LN18	08/05/92	S	Phenol-D6	85.07			6.700	5.700	UGG
		LN18	08/05/92	S	Terphenyl-D14	106.06			3.300	3.500	UGG
ES	ZOV	00	07/03/92	S	Total petroleum hydrocarbons	97.35			1130.000	1100.000	UGG
ES	ZOW	00	07/06/92	S	Total petroleum hydrocarbons	98.23			1130.000	1110.000	UGG
ES	ZOX	00	07/09/92	S	Total petroleum hydrocarbons	99.17			1210.000	1200.000	UGG
ES	ZPA	UN20	06/22/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		UN20	06/22/92	S	4-Bromofluorobenzene	98.00			50.000	49.000	UGL
		UN20	06/22/92	S	Toluene-D8	96.00			50.000	48.000	UGL
ES	ZPC	UN20	06/26/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		UN20	06/26/92	S	4-Bromofluorobenzene	100.00			50.000	50.000	UGL
		UN20	06/26/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPD	UN20	07/01/92	S	1,2-Dichloroethane-D4	92.00			50.000	46.000	UGL
		UN20	07/01/92	S	4-Bromofluorobenzene	92.00			50.000	46.000	UGL
		UN20	07/01/92	S	Toluene-D8	92.00			50.000	46.000	UGL
ES	ZPE	UN20	07/02/92	S	1,2-Dichloroethane-D4	98.00			50.000	49.000	UGL

Notes for Data Flags: 1 = Results less than CGL but greater than CGL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tecela-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZPE	UK20	07/02/92	S	4-Bromofluorobenzene	100.00			50.000	50.000	UGL
		UK20	07/02/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPF	UK20	07/07/92	S	1,2-Dichloroethane-D4	94.00			50.000	47.000	UGL
		UK20	07/07/92	S	4-Bromofluorobenzene	96.00			50.000	48.000	UGL
		UK20	07/07/92	S	Toluene-D8	96.00			50.000	48.000	UGL
ES	ZPG	UK20	07/14/92	S	1,2-Dichloroethane-D4	94.00			50.000	47.000	UGL
		UK20	07/14/92	S	4-Bromofluorobenzene	96.00			50.000	48.000	UGL
		UK20	07/14/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPH	UK20	07/16/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		UK20	07/16/92	S	4-Bromofluorobenzene	98.00			50.000	49.000	UGL
		UK20	07/16/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPI	UK20	07/17/92	S	1,2-Dichloroethane-D4	94.00			50.000	47.000	UGL
		UK20	07/17/92	S	4-Bromofluorobenzene	98.00			50.000	49.000	UGL
		UK20	07/17/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPK	UK20	07/22/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		UK20	07/22/92	S	4-Bromofluorobenzene	96.00			50.000	48.000	UGL
		UK20	07/22/92	S	Toluene-D8	94.00			50.000	47.000	UGL
ES	ZPL	UK20	07/24/92	S	1,2-Dichloroethane-D4	92.00			50.000	46.000	UGL
		UK20	07/24/92	S	4-Bromofluorobenzene	98.00			50.000	49.000	UGL
		UK20	07/24/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPS	UK20	08/04/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		UK20	08/04/92	S	4-Bromofluorobenzene	96.00			50.000	48.000	UGL
		UK20	08/04/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPU	UK20	08/07/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		UK20	08/07/92	S	4-Bromofluorobenzene	100.00			50.000	50.000	UGL
		UK20	08/07/92	S	Toluene-D8	100.00			50.000	50.000	UGL
ES	ZPV	UK20	08/11/92	S	1,2-Dichloroethane-D4	94.00			50.000	47.000	UGL
		UK20	08/11/92	S	4-Bromofluorobenzene	98.00			50.000	49.000	UGL
		UK20	08/11/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPW	UK20	08/12/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		UK20	08/12/92	S	4-Bromofluorobenzene	98.00			50.000	49.000	UGL
		UK20	08/12/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPX	UK20	08/13/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		UK20	08/13/92	S	4-Bromofluorobenzene	100.00			50.000	50.000	UGL
		UK20	08/13/92	S	Toluene-D8	100.00			50.000	50.000	UGL
ES	ZPY	UK20	08/18/92	S	1,2-Dichloroethane-D4	98.00			50.000	49.000	UGL
		UK20	08/18/92	S	4-Bromofluorobenzene	100.00			50.000	50.000	UGL
		UK20	08/18/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZRA	J801	07/07/92	S	Mercury	83.67			0.000	0.002	UGL
		J801	07/07/92	S	Mercury	92.30			0.792	0.731	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Teague-North Phase I EPI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Conc.	Recovered Conc.	Units
ES	Z0A	J801	07/07/92	S	Mercury	87.36			0.799	0.698	UGG
ES	Z0B	J801	07/10/92	S	Mercury	89.90			0.099	0.089	UGG
		J801	07/10/92	S	Mercury	87.42			0.733	0.660	UGG
		J801	07/10/92	S	Mercury	92.25			0.800	0.738	UGG
ES	Z0C	J801	07/10/92	S	Mercury	91.67			0.096	0.088	UGG
		J801	07/10/92	S	Mercury	97.12			0.764	0.742	UGG
		J801	07/10/92	S	Mercury	96.32			0.789	0.760	UGG
ES	Z0E	J801	07/10/92	S	Mercury	92.86			0.098	0.091	UGG
		J801	07/10/92	S	Mercury	96.11			0.766	0.717	UGG
		J801	07/10/92	S	Mercury	97.33			0.786	0.765	UGG
ES	Z0G	J801	07/15/92	S	Mercury	89.00			0.100	0.089	UGG
		J801	07/15/92	S	Mercury	99.86			0.760	0.739	UGG
		J801	07/15/92	S	Mercury	97.96			0.785	0.769	UGG
ES	Z0H	J801	07/20/92	S	Mercury	121.21			0.099	0.120	UGG
		J801	07/20/92	S	Mercury	98.35			0.790	0.777	UGG
		J801	07/20/92	S	Mercury	99.75			0.797	0.795	UGG
ES	Z0J	J801	07/20/92	S	Mercury	135.71			0.098	0.133	UGG
		J801	07/20/92	S	Mercury	105.93			0.792	0.839	UGG
		J801	07/20/92	S	Mercury	107.39			0.798	0.857	UGG
ES	Z0K	J801	07/21/92	S	Mercury	112.12			0.099	0.111	UGG
		J801	07/21/92	S	Mercury	107.26			0.785	0.842	UGG
		J801	07/21/92	S	Mercury	103.79			0.792	0.822	UGG
ES	Z0L	J801	07/22/92	S	Mercury	92.86			0.098	0.091	UGG
		J801	07/22/92	S	Mercury	93.93			0.791	0.743	UGG
		J801	07/22/92	S	Mercury	99.37			0.797	0.792	UGG
ES	Z0P	J801	07/27/92	S	Mercury	91.00			0.100	0.091	UGG
		J801	07/27/92	S	Mercury	97.29			0.774	0.733	UGG
		J801	07/27/92	S	Mercury	99.62			0.792	0.789	UGG
ES	Z0S	J801	08/03/92	S	Mercury	88.78			0.098	0.087	UGG
		J801	08/03/92	S	Mercury	99.09			0.771	0.764	UGG
		J801	08/03/92	S	Mercury	97.12			0.799	0.776	UGG
ES	Z0T	J801	08/01/92	S	Mercury	117.17			0.099	0.116	UGG
		J801	08/01/92	S	Mercury	96.32			0.788	0.739	UGG
		J801	08/01/92	S	Mercury	96.86			0.797	0.772	UGG
ES	Z0U	J801	08/04/92	S	Mercury	99.00			0.100	0.099	UGG
		J801	08/04/92	S	Mercury	96.11			0.796	0.765	UGG
		J801	08/04/92	S	Mercury	99.30			0.799	0.795	UGG
ES	Z0V	J801	08/07/92	S	Mercury	86.73			0.098	0.085	UGG
		J801	08/07/92	S	Mercury	87.86			0.791	0.695	UGG
		J801	08/07/92	S	Mercury	87.92			0.795	0.699	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than C20, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits



Tosco-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZOW	J801	08/17/92	S	Mercury	73.96			0.096	0.071	UGG
		J801	08/17/92	S	Mercury	92.20			0.756	0.697	UGG
		J801	08/17/92	S	Mercury	88.71			0.797	0.707	UGG
ES	ZGY	J801	08/20/92	S	Mercury	87.76			0.098	0.086	UGG
		J801	08/20/92	S	Mercury	91.13			0.778	0.709	UGG
		J801	08/20/92	S	Mercury	91.88			0.800	0.735	UGG
ES	ZRA	UN18	07/07/92	S	2,4,6-Tribromophenol	81.00			100.000	81.000	UGL
		UN18	07/07/92	S	2-Fluorobiphenyl	64.00			50.000	32.000	UGL
		UN18	07/07/92	S	2-Fluorophenol	61.00			100.000	61.000	UGL
		UN18	07/07/92	S	Nitrobenzene-D5	74.00			50.000	37.000	UGL
		UN18	07/07/92	S	Phenol-D6	40.00			100.000	40.000	UGL
		UN18	07/07/92	S	Terphenyl-D14	102.00			50.000	51.000	UGL
ES	ZRD	UN18	07/17/92	S	2,4,6-Tribromophenol	85.00			100.000	85.000	UGL
		UN18	07/17/92	S	2-Fluorobiphenyl	66.00			50.000	33.000	UGL
		UN18	07/17/92	S	2-Fluorophenol	61.00			100.000	61.000	UGL
		UN18	07/17/92	S	Nitrobenzene-D5	68.00			50.000	34.000	UGL
		UN18	07/17/92	S	Phenol-D6	44.00			100.000	44.000	UGL
		UN18	07/17/92	S	Terphenyl-D14	72.00			50.000	36.000	UGL
Es	ZRE	UN18	07/21/92	S	2,4,6-Tribromophenol	95.00			100.000	95.000	UGL
		UN18	07/21/92	S	2-Fluorobiphenyl	72.00			50.000	36.000	UGL
		UN18	07/21/92	S	2-Fluorophenol	59.00			100.000	59.000	UGL
		UN18	07/21/92	S	Nitrobenzene-D5	74.00			50.000	37.000	UGL
		UN18	07/21/92	S	Phenol-D6	45.00			100.000	45.000	UGL
		UN18	07/21/92	S	Terphenyl-D14	88.00			50.000	44.000	UGL
ES	ZRG	UN18	07/21/92	S	2,4,6-Tribromophenol	83.00			100.000	83.000	UGL
		UN18	07/21/92	S	2-Fluorobiphenyl	76.00			50.000	38.000	UGL
		UN18	07/21/92	S	2-Fluorophenol	61.00			100.000	61.000	UGL
		UN18	07/21/92	S	Nitrobenzene-D5	78.00			50.000	39.000	UGL
		UN18	07/21/92	S	Phenol-D6	45.00			100.000	45.000	UGL
		UN18	07/21/92	S	Terphenyl-D14	104.00			50.000	52.000	UGL
ES	ZRH	UN18	07/29/92	S	2,4,6-Tribromophenol	81.00			100.000	81.000	UGL
		UN18	07/29/92	S	2-Fluorobiphenyl	86.00			50.000	43.000	UGL
		UN18	07/29/92	S	2-Fluorophenol	66.00			100.000	66.000	UGL
		UN18	07/29/92	S	Nitrobenzene-D5	84.00			50.000	42.000	UGL
		UN18	07/29/92	S	Phenol-D6	46.00			100.000	46.000	UGL
		UN18	07/29/92	S	Terphenyl-D14	78.00			50.000	39.000	UGL
ES	ZRI	UN18	07/31/92	S	2,4,6-Tribromophenol	90.00			100.000	90.000	UGL
		UN18	07/31/92	S	2-Fluorobiphenyl	68.00			50.000	34.000	UGL
		UN18	07/31/92	S	2-Fluorophenol	60.00			100.000	60.000	UGL
		UN18	07/31/92	S	Nitrobenzene-D5	68.00			50.000	34.000	UGL
		UN18	07/31/92	S	Phenol-D6	40.00			100.000	40.000	UGL
		UN18	07/31/92	S	Terphenyl-D14	76.00			50.000	38.000	UGL
Es	ZRJ	UN18	08/04/92	S	2,4,6-Tribromophenol	90.00			100.000	90.000	UGL
		UN18	08/04/92	S	2-Fluorobiphenyl	88.00			50.000	44.000	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tosco-North Plains 1 RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spike Conc.	Recovery Conc.	Units
ES	ZRJ	UM18	08/04/92	S	2-Fluorophenol	68.00			100.000	68.000	UGL
		UM18	08/04/92	S	Nitrobenzene-D5	80.00			50.000	40.000	UGL
		UM18	08/04/92	S	Phenol-D6	50.00			100.000	50.000	UGL
		UM18	08/04/92	S	Terphenyl-D14	82.00			50.000	41.000	UGL
ES	ZRO	UM18	08/12/92	S	2,4,6-Tribromophenol	110.00			100.000	110.000	UGL
		UM18	08/12/92	S	2-Fluorobiphenyl	90.00			50.000	45.000	UGL
		UM18	08/12/92	S	2-Fluorophenol	90.00			100.000	90.000	UGL
		UM18	08/12/92	S	Nitrobenzene-D5	92.00			50.000	46.000	UGL
		UM18	08/12/92	S	Phenol-D6	59.00			100.000	59.000	UGL
		UM18	08/12/92	S	Terphenyl-D14	120.00			50.000	60.000	UGL
ES	ZRP	UM18	08/19/92	S	2,4,6-Tribromophenol	52.00			100.000	52.000	UGL
		UM18	08/19/92	S	2-Fluorobiphenyl	76.00			50.000	38.000	UGL
		UM18	08/19/92	S	2-Fluorophenol	58.00			100.000	58.000	UGL
		UM18	08/19/92	S	Nitrobenzene-D5	66.00			50.000	33.000	UGL
		UM18	08/19/92	S	Phenol-D6	42.00			100.000	42.000	UGL
		UM18	08/19/92	S	Terphenyl-D14	94.00			50.000	47.000	UGL
ES	ZRR	UM18	08/14/92	S	2,4,6-Tribromophenol	94.00			100.000	94.000	UGL
		UM18	08/14/92	S	2-Fluorobiphenyl	76.00			50.000	38.000	UGL
		UM18	08/14/92	S	2-Fluorophenol	75.00			100.000	75.000	UGL
		UM18	08/14/92	S	Nitrobenzene-D5	82.00			50.000	41.000	UGL
		UM18	08/14/92	S	Phenol-D6	60.00			100.000	60.000	UGL
		UM18	08/14/92	S	Terphenyl-D14	106.00			50.000	53.000	UGL
ES	ZRS	UM18	08/14/92	S	2,4,6-Tribromophenol	100.00			100.000	100.000	UGL
		UM18	08/14/92	S	2-Fluorobiphenyl	96.00			50.000	48.000	UGL
		UM18	08/14/92	S	2-Fluorophenol	76.00			100.000	76.000	UGL
		UM18	08/14/92	S	Nitrobenzene-D5	94.00			50.000	47.000	UGL
		UM18	08/14/92	S	Phenol-D6	51.00			100.000	51.000	UGL
		UM18	08/14/92	S	Terphenyl-D14	92.00			50.000	46.000	UGL
ES	ZRV	UM18	08/25/92	S	2,4,6-Tribromophenol	89.00			100.000	89.000	UGL
		UM18	08/25/92	S	2-Fluorobiphenyl	86.00			50.000	43.000	UGL
		UM18	08/25/92	S	2-Fluorophenol	71.00			100.000	71.000	UGL
		UM18	08/25/92	S	Nitrobenzene-D5	94.00			50.000	47.000	UGL
		UM18	08/25/92	S	Phenol-D6	42.00			100.000	42.000	UGL
		UM18	08/25/92	S	Terphenyl-D14	100.00			50.000	50.000	UGL
ES	ZSB	JB15	07/25/92	S	Selenium	113.95			0.481	0.548	UGG
		JB15	07/25/92	S	Selenium	99.07			7.560	7.490	UGG
		JB15	07/25/92	S	Selenium	100.92			7.570	7.640	UGG
ES	ZSC	JB15	08/09/92	S	Selenium	112.03			0.482	0.540	UGG
		JB15	08/09/92	S	Selenium	93.22			7.820	7.290	UGG
		JB15	08/09/92	S	Selenium	93.71			7.990	7.490	UGG
ES	ZSF	JB15	08/16/92	S	Selenium	103.78			0.476	0.494	UGG
		JB15	08/16/92	S	Selenium	96.75			7.898	7.440	UGG
		JB15	08/16/92	S	Selenium	102.26			7.970	8.130	UGG
ES	ZSG	JB15	08/17/92	S	Selenium	109.98			0.491	0.540	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CGL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.
ES	ZSG	JD15	08/17/92	S	Selenium	86.23			7.770	6.700
		JD15	08/17/92	S	Selenium	87.55			7.790	6.820
ES	ZSH	JD15	08/20/92	S	Selenium	86.12			0.490	0.422
		JD15	08/20/92	S	Selenium	94.39			7.310	6.900
		JD15	08/20/92	S	Selenium	95.35			7.520	7.170
ES	ZSM	JD15	08/24/92	S	Selenium	100.00			0.495	0.495
		JD15	08/24/92	S	Selenium	100.27			7.510	7.530
		JD15	08/24/92	S	Selenium	101.45			7.570	7.680
ES	ZSO	JD15	09/16/92	S	Selenium	117.84			0.499	0.588
		JD15	09/16/92	S	Selenium	99.74			7.810	7.790
		JD15	09/16/92	S	Selenium	98.48			7.900	7.780
ES	ZSP	JD15	09/19/92	S	Selenium	125.81			0.492	0.619
		JD15	09/19/92	S	Selenium	99.36			7.780	7.730
		JD15	09/19/92	S	Selenium	98.87			7.990	7.900
ES	ZSS	JD15	08/07/92	S	Selenium	108.03			0.473	0.511
		JD15	08/07/92	S	Selenium	100.92			7.590	7.660
		JD15	08/07/92	S	Selenium	98.04			7.640	7.490
ES	ZSW	JD15	09/28/92	S	Selenium	113.79			0.464	0.528
		JD15	09/28/92	S	Selenium	99.48			7.680	7.640
		JD15	09/28/92	S	Selenium	100.26			7.760	7.780
ES	ZSY	JD15	09/28/92	S	Selenium	113.82			0.492	0.560
		JD15	09/28/92	S	Selenium	94.50			7.630	7.210
		JD15	09/28/92	S	Selenium	93.59			7.960	7.450
ES	ZTA	LM19	06/26/92	S	1,2-Dichloroethane-D4	98.00			0.050	0.049
		LM19	06/26/92	S	4-Bromofluorobenzene	102.00			0.050	0.051
		LM19	06/26/92	S	Toluene-D8	104.00			0.050	0.052
ES	ZTB	LM19	06/29/92	S	1,2-Dichloroethane-D4	108.00			0.050	0.054
		LM19	06/29/92	S	4-Bromofluorobenzene	112.00			0.050	0.056
		LM19	06/29/92	S	Toluene-D8	110.00			0.050	0.055
ES	ZTC	LM19	06/24/92	S	1,2-Dichloroethane-D4	100.00			0.050	0.050
		LM19	06/24/92	S	4-Bromofluorobenzene	102.00			0.050	0.051
		LM19	06/24/92	S	Toluene-D8	98.00			0.050	0.049
ES	ZTE	LM19	07/01/92	S	1,2-Dichloroethane-D4	98.00			0.050	0.049
		LM19	07/01/92	S	4-Bromofluorobenzene	102.00			0.050	0.051
		LM19	07/01/92	S	Toluene-D8	104.00			0.050	0.052
ES	ZTF	LM19	07/02/92	S	1,2-Dichloroethane-D4	92.00			0.050	0.046
		LM19	07/02/92	S	4-Bromofluorobenzene	96.00			0.050	0.048
		LM19	07/02/92	S	Toluene-D8	100.00			0.050	0.050
ES	ZTG	LM19	07/03/92	S	1,2-Dichloroethane-D4	106.00			0.050	0.053
		LM19	07/03/92	S	4-Bromofluorobenzene	104.00			0.050	0.052

Notes for Data Flags: 1 = Results less than CRL but greater than COD, R = Analyte required for reporting purposes but not certified, X = Analyte recovery outside of certified range but within acceptable limits

## APPENDIX C-18

Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Unit
ES	ZTG	LM19	07/03/92	S	Toluene-D8	100.00			0.050	0.050	UG
ES	ZTJ	LM19	07/07/92	S	1,2-Dichloroethane-D4	98.00			0.050	0.049	UG
		LM19	07/07/92	S	4-Bromofluorobenzene	104.00			0.050	0.052	UG
		LM19	07/07/92	S	Toluene-D8	98.00			0.050	0.049	UG
ES	ZTL	LM19	07/09/92	S	1,2-Dichloroethane-D4	104.00			0.050	0.052	UG
		LM19	07/09/92	S	4-Bromofluorobenzene	104.00			0.050	0.052	UG
		LM19	07/09/92	S	Toluene-D8	104.00			0.050	0.052	UG
ES	ZTM	LM19	07/13/92	S	1,2-Dichloroethane-D4	92.00			0.050	0.046	UG
		LM19	07/13/92	S	4-Bromofluorobenzene	96.00			0.050	0.048	UG
		LM19	07/13/92	S	Toluene-D8	100.00			0.050	0.050	UG
ES	ZTN	LM19	07/16/92	S	1,2-Dichloroethane-D4	94.00			0.050	0.047	UG
		LM19	07/16/92	S	4-Bromofluorobenzene	100.00			0.050	0.050	UG
		LM19	07/16/92	S	Toluene-D8	98.00			0.050	0.049	UG
ES	ZTO	LM19	07/16/92	S	1,2-Dichloroethane-D4	102.00			0.050	0.051	UG
		LM19	07/16/92	S	4-Bromofluorobenzene	100.00			0.050	0.050	UG
		LM19	07/16/92	S	Toluene-D8	100.00			0.050	0.050	UG
ES	ZTP	LM19	07/17/92	S	1,2-Dichloroethane-D4	106.00			0.050	0.053	UG
		LM19	07/17/92	S	4-Bromofluorobenzene	104.00			0.050	0.052	UG
		LM19	07/17/92	S	Toluene-D8	108.00			0.050	0.054	UG
ES	ZTQ	LM19	07/18/92	S	1,2-Dichloroethane-D4	96.00			0.050	0.048	UG
		LM19	07/18/92	S	4-Bromofluorobenzene	100.00			0.050	0.050	UG
		LM19	07/18/92	S	Toluene-D8	102.00			0.050	0.051	UG
ES	ZTS	LM19	07/20/92	S	1,2-Dichloroethane-D4	102.00			0.050	0.051	UG
		LM19	07/20/92	S	4-Bromofluorobenzene	104.00			0.050	0.052	UG
		LM19	07/20/92	S	Toluene-D8	100.00			0.050	0.050	UG
ES	ZTT	LM19	07/20/92	S	1,2-Dichloroethane-D4	94.00			0.050	0.047	UG
		LM19	07/20/92	S	4-Bromofluorobenzene	94.00			0.050	0.047	UG
		LM19	07/20/92	S	Toluene-D8	96.00			0.050	0.048	UG
ES	ZTV	LM19	07/21/92	S	1,2-Dichloroethane-D4	96.00			0.050	0.048	UG
		LM19	07/21/92	S	4-Bromofluorobenzene	100.00			0.050	0.050	UG
		LM19	07/21/92	S	Toluene-D8	104.00			0.050	0.052	UG
ES	ZTV	LM19	07/22/92	S	1,2-Dichloroethane-D4	94.00			0.050	0.047	UG
		LM19	07/22/92	S	4-Bromofluorobenzene	92.00			0.050	0.046	UG
		LM19	07/22/92	S	Toluene-D8	92.00			0.050	0.046	UG
ES	ZTX	LM19	07/24/92	S	1,2-Dichloroethane-D4	98.00			0.050	0.049	UG
		LM19	07/24/92	S	4-Bromofluorobenzene	100.00			0.050	0.050	UG
		LM19	07/24/92	S	Toluene-D8	100.00			0.050	0.050	UG
ES	ZTY	LM19	07/26/92	S	1,2-Dichloroethane-D4	96.00			0.050	0.048	UG
		LM19	07/26/92	S	4-Bromofluorobenzene	104.00			0.050	0.052	UG
		LM19	07/26/92	S	Toluene-D8	100.00			0.050	0.050	UG

Notes for Data Flags: I = Results less than CRL but greater than COO, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Unit
ES	ZUA	SD20	07/25/92	S	Lead	90.00			10.000	9.000	UGL
		SD20	07/25/92	S	Lead	95.75			80.000	76.600	UGL
		SD20	07/25/92	S	Lead	96.38			80.000	77.100	UGL
ES	ZUE	SD20	08/20/92	S	Lead	106.00			10.000	10.600	UGL
		SD20	08/20/92	S	Lead	104.13			80.000	83.300	UGL
		SD20	08/20/92	S	Lead	104.63			80.000	83.700	UGL
ES	ZUH	SD20	08/07/92	S	Lead	106.00			10.000	10.600	UGL
		SD20	08/07/92	S	Lead	94.50			80.000	75.600	UGL
		SD20	08/07/92	S	Lead	95.88			80.000	76.700	UGL
ES	ZUI	SD20	08/10/92	S	Lead	79.00			10.000	7.900	UGL
		SD20	08/10/92	S	Lead	102.50			80.000	82.000	UGL
		SD20	08/10/92	S	Lead	104.25			80.000	83.400	UGL
ES	ZUM	SD20	09/03/92	S	Lead	78.00			10.000	7.800	UGL
		SD20	09/03/92	S	Lead	96.00			80.000	76.800	UGL
		SD20	09/03/92	S	Lead	98.00			80.000	78.400	UGL
ES	ZUN	SD20	08/13/92	S	Lead	108.00			10.000	10.800	UGL
		SD20	08/13/92	S	Lead	102.38			80.000	81.900	UGL
		SD20	08/13/92	S	Lead	103.75			80.000	83.000	UGL
ES	ZWA	00	07/08/92	S	Total petroleum hydrocarbons	90.65			4280.000	3880.000	UGL
		00	07/08/92	S	Total petroleum hydrocarbons	93.46			4280.000	4000.000	UGL
ES	ZXA	JD17	08/19/92	S	Lead	113.24			0.491	0.556	UGG
		JD17	08/19/92	S	Lead	84.81			7.770	6.590	UGG
		JD17	08/19/92	S	Lead	83.57			7.790	6.510	UGG
ES	ZXB	JD17	08/19/92	S	Lead	94.29			0.490	0.462	UGG
		JD17	08/19/92	S	Lead	81.94			7.310	5.990	UGG
		JD17	08/19/92	S	Lead	81.38			7.520	6.120	UGG
ES	ZXC	JD17	08/20/92	S	Lead	107.47			0.495	0.532	UGG
		JD17	08/20/92	S	Lead	82.54			7.510	6.200	UGG
		JD17	08/20/92	S	Lead	84.28			7.570	6.380	UGG
ES	ZXI	JD17	09/14/92	S	Lead	84.77			0.499	0.423	UGG
		JD17	09/14/92	S	Lead	98.21			7.810	7.670	UGG
		JD17	09/14/92	S	Lead	98.61			7.900	7.790	UGG
ES	ZXJ	JD17	09/15/92	S	Lead	97.15			0.492	0.478	UGG
		JD17	09/15/92	S	Lead	104.63			7.780	8.140	UGG
		JD17	09/15/92	S	Lead	104.63			7.990	8.360	UGG
ES	ZXM	JD17	08/19/92	S	Lead	100.20			0.488	0.489	UGG
		JD17	08/19/92	S	Lead	87.35			7.270	6.350	UGG
		JD17	08/19/92	S	Lead	83.93			7.990	6.370	UGG
ES	ZXQ	JD17	09/17/92	S	Lead	82.54			0.484	0.383	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than COB, R = Analyte required for reporting purposes but not current certified, X = Analyte recovery outside of certified range but within acceptable limits

## APPENDIX C-18

Page 62

Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZXQ	JD17	09/17/92	S	Lead	95.31			7.680	7.320	UGG
		JD17	09/17/92	S	Lead	93.81			7.760	7.280	UGG
ES	ZXS	JD17	09/25/92	S	Lead	110.57			0.492	0.544	UGG
		JD17	09/25/92	S	Lead	99.87			7.630	7.620	UGG
		JD17	09/25/92	S	Lead	98.37			7.960	7.830	UGG
ES	ZXW	JD17	09/28/92	S	Lead	80.99			0.484	0.392	UGG
		JD17	09/28/92	S	Lead	102.04			7.830	7.990	UGG
		JD17	09/28/92	S	Lead	100.50			7.980	8.020	UGG
ES	ZXZ	JD17	09/29/92	S	Lead	82.32			0.492	0.405	UGG
		JD17	09/29/92	S	Lead	98.58			7.730	7.640	UGG
		JD17	09/29/92	S	Lead	101.40			7.880	7.990	UGG
ES	ZYA	LU12	08/06/92	S	1,3,5-Trinitrobenzene	82.87			1.150	0.953	UGG
		LU12	08/06/92	S	1,3,5-Trinitrobenzene	83.95			9.220	7.760	UGG
		LU12	08/06/92	S	1,3,5-Trinitrobenzene	87.85			9.220	8.180	UGG
		LU12	08/06/92	S	2,4,6-Trinitrotoluene	92.73			1.100	1.020	UGG
		LU12	08/06/92	S	2,4,6-Trinitrotoluene	91.93			8.800	8.090	UGG
		LU12	08/06/92	S	2,4,6-Trinitrotoluene	96.48			8.800	8.490	UGG
		LU12	08/06/92	S	2,4-Dinitrotoluene	86.99			1.230	1.070	UGG
		LU12	08/06/92	S	2,4-Dinitrotoluene	82.22			9.840	8.090	UGG
		LU12	08/06/92	S	2,4-Dinitrotoluene	85.77			9.840	8.440	UGG
		LU12	08/06/92	S	2-Nitrotoluene (TIC)	92.43			0.530	0.490	UGG
		LU12	08/06/92	S	2-Nitrotoluene (TIC)	86.40			22.800	19.700	UGG
		LU12	08/06/92	S	2-Nitrotoluene (TIC)	92.98			22.800	21.200	UGG
		LU12	08/06/92	S	2-Nitrotoluene (TIC)	93.20			45.600	42.500	UGG
		LU12	08/06/92	S	Nitrobenzene	93.79			3.060	2.870	UGG
		LU12	08/06/92	S	Nitrobenzene	88.98			24.500	21.800	UGG
		LU12	08/06/92	S	Nitrobenzene	91.43			24.500	22.400	UGG
		LU12	08/06/92	S	Cyclonite (RDX)	90.91			1.100	1.000	UGG
		LU12	08/06/92	S	Cyclonite (RDX)	86.92			8.790	7.640	UGG
		LU12	08/06/92	S	Cyclonite (RDX)	87.03			8.790	7.450	UGG
ES	ZYB	LU12	08/09/92	S	1,3,5-Trinitrobenzene	68.26			1.150	0.785	UGG
		LU12	08/09/92	S	1,3,5-Trinitrobenzene	77.11			9.220	7.110	UGG
		LU12	08/09/92	S	1,3,5-Trinitrobenzene	79.39			9.220	7.320	UGG
		LU12	08/09/92	S	2,4,6-Trinitrotoluene	88.82			1.100	0.977	UGG
		LU12	08/09/92	S	2,4,6-Trinitrotoluene	90.23			8.800	7.940	UGG
		LU12	08/09/92	S	2,4,6-Trinitrotoluene	91.25			8.800	8.630	UGG
		LU12	08/09/92	S	2,4-Dinitrotoluene	82.93			1.230	1.020	UGG
		LU12	08/09/92	S	2,4-Dinitrotoluene	80.79			9.840	7.950	UGG
		LU12	08/09/92	S	2,4-Dinitrotoluene	81.20			9.840	7.990	UGG
		LU12	08/09/92	S	2-Nitrotoluene (TIC)	85.47			0.530	0.453	UGG
		LU12	08/09/92	S	2-Nitrotoluene (TIC)	87.72			22.800	20.000	UGG
		LU12	08/09/92	S	2-Nitrotoluene (TIC)	89.47			22.800	20.400	UGG
		LU12	08/09/92	S	2-Nitrotoluene (TIC)	94.88			45.600	42.900	UGG
		LU12	08/09/92	S	Nitrobenzene	94.12			3.060	2.880	UGG
		LU12	08/09/92	S	Nitrobenzene	91.43			24.500	22.400	UGG
		LU12	08/09/92	S	Nitrobenzene	91.84			24.500	22.900	UGG
		LU12	08/09/92	S	Cyclonite (RDX)	82.80			1.100	0.980	UGG
		LU12	08/09/92	S	Cyclonite (RDX)	85.78			8.790	7.340	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tosco-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Unit
ES	ZYB	LW12	08/09/92	S	Cyclonite (RDX)	86.23			8.790	7.580	UGG
ES	ZYC	LW12	08/10/92	S	1,3,5-Trinitrobenzene	80.96			1.158	0.931	UGG
		LW12	08/10/92	S	1,3,5-Trinitrobenzene	78.20			9.220	7.210	UGG
		LW12	08/10/92	S	1,3,5-Trinitrobenzene	79.83			9.220	7.360	UGG
		LW12	08/10/92	S	2,4,6-Trinitrotoluene	92.73			1.100	1.020	UGG
		LW12	08/10/92	S	2,4,6-Trinitrotoluene	90.45			8.800	7.960	UGG
		LW12	08/10/92	S	2,4,6-Trinitrotoluene	91.70			8.800	8.070	UGG
		LW12	08/10/92	S	2,4-Dinitrotoluene	84.55			1.230	1.040	UGG
		LW12	08/10/92	S	2,4-Dinitrotoluene	81.10			9.840	7.980	UGG
		LW12	08/10/92	S	2,4-Dinitrotoluene	82.62			9.840	8.130	UGG
		LW12	08/10/92	S	2-Nitrotoluene (TIC)	88.11			0.530	0.467	UGG
		LW12	08/10/92	S	2-Nitrotoluene (TIC)	91.67			22.800	20.900	UGG
		LW12	08/10/92	S	2-Nitrotoluene (TIC)	92.98			22.800	21.200	UGG
		LW12	08/10/92	S	2-Nitrotoluene (TIC)	98.03			45.600	44.700	UGG
		LW12	08/10/92	S	Nitrobenzene	94.12			3.060	2.880	UGG
		LW12	08/10/92	S	Nitrobenzene	93.06			24.500	22.800	UGG
		LW12	08/10/92	S	Nitrobenzene	94.29			24.500	23.100	UGG
		LW12	08/10/92	S	Cyclonite (RDX)	86.82			1.100	0.935	UGG
		LW12	08/10/92	S	Cyclonite (RDX)	86.69			8.790	7.620	UGG
		LW12	08/10/92	S	Cyclonite (RDX)	88.40			8.790	7.770	UGG
	YF	LW12	08/14/92	S	1,3,5-Trinitrobenzene	74.43			1.150	0.856	UGG
		LW12	08/14/92	S	1,3,5-Trinitrobenzene	78.09			9.220	7.200	UGG
		LW12	08/14/92	S	1,3,5-Trinitrobenzene	80.69			9.220	7.440	UGG
		LW12	08/14/92	S	2,4,6-Trinitrotoluene	90.00			1.100	0.990	UGG
		LW12	08/14/92	S	2,4,6-Trinitrotoluene	91.59			8.800	8.060	UGG
		LW12	08/14/92	S	2,4,6-Trinitrotoluene	91.59			8.800	8.060	UGG
		LW12	08/14/92	S	2,4-Dinitrotoluene	86.18			1.230	1.060	UGG
		LW12	08/14/92	S	2,4-Dinitrotoluene	87.40			9.840	8.600	UGG
		LW12	08/14/92	S	2,4-Dinitrotoluene	89.02			9.840	8.760	UGG
		LW12	08/14/92	S	2-Nitrotoluene (TIC)	89.25			0.530	0.473	UGG
		LW12	08/14/92	S	2-Nitrotoluene (TIC)	95.61			22.800	21.800	UGG
		LW12	08/14/92	S	2-Nitrotoluene (TIC)	96.05			22.800	21.900	UGG
		LW12	08/14/92	S	2-Nitrotoluene (TIC)	97.59			45.600	44.500	UGG
		LW12	08/14/92	S	Nitrobenzene	98.00			3.060	2.940	UGG
		LW12	08/14/92	S	Nitrobenzene	100.00			24.000	24.000	UGG
		LW12	08/14/92	S	Nitrobenzene	102.50			24.000	24.600	UGG
		LW12	08/14/92	S	Cyclonite (RDX)	84.00			1.100	0.924	UGG
		LW12	08/14/92	S	Cyclonite (RDX)	89.76			8.790	7.890	UGG
		LW12	08/14/92	S	Cyclonite (RDX)	91.35			8.790	8.030	UGG
ES	ZYG	LW12	08/12/92	S	1,3,5-Trinitrobenzene	73.04			1.150	0.840	UGG
		LW12	08/12/92	S	1,3,5-Trinitrobenzene	78.20			9.220	7.210	UGG
		LW12	08/12/92	S	1,3,5-Trinitrobenzene	80.91			9.220	7.440	UGG
		LW12	08/12/92	S	2,4,6-Trinitrotoluene	100.00			1.100	1.100	UGG
		LW12	08/12/92	S	2,4,6-Trinitrotoluene	96.36			8.800	8.480	UGG
		LW12	08/12/92	S	2,4,6-Trinitrotoluene	97.61			8.800	8.398	UGG
		LW12	08/12/92	S	2,4-Dinitrotoluene	88.62			1.230	1.098	UGG
		LW12	08/12/92	S	2,4-Dinitrotoluene	86.79			9.840	8.540	UGG
		LW12	08/12/92	S	2,4-Dinitrotoluene	87.58			9.840	8.618	UGG
		LW12	08/12/92	S	2-Nitrotoluene (TIC)	97.17			8.530	8.515	UGG
		LW12	08/12/92	S	2-Nitrotoluene (TIC)	92.11			22.800	21.000	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tosco-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Conc.	Recovered Conc.	Units
ES	ZYG	LW12	08/12/92	S	2-Nitrotoluene (TIC)	92.98			22.800	21.200	UGG
		LW12	08/12/92	S	2-Nitrotoluene (TIC)	97.15			45.600	44.300	UGG
		LW12	08/12/92	S	Nitrobenzene	98.33			3.000	2.950	UGG
		LW12	08/12/92	S	Nitrobenzene	96.67			24.000	23.200	UGG
		LW12	08/12/92	S	Nitrobenzene	97.50			24.000	23.600	UGG
		LW12	08/12/92	S	Cyclonite (RDX)	92.73			1.100	1.020	UGG
		LW12	08/12/92	S	Cyclonite (RDX)	88.85			8.790	7.810	UGG
		LW12	08/12/92	S	Cyclonite (RDX)	88.96			8.790	7.820	UGG
ES	ZYH	LW12	08/13/92	S	1,3,5-Trinitrobenzene	81.84			1.150	0.932	UGG
		LW12	08/13/92	S	1,3,5-Trinitrobenzene	81.24			9.220	7.490	UGG
		LW12	08/13/92	S	1,3,5-Trinitrobenzene	81.24			9.220	7.490	UGG
		LW12	08/13/92	S	2,4,6-Trinitrotoluene	100.00			1.100	1.100	UGG
		LW12	08/13/92	S	2,4,6-Trinitrotoluene	94.89			8.800	8.350	UGG
		LW12	08/13/92	S	2,4,6-Trinitrotoluene	97.27			8.800	8.560	UGG
		LW12	08/13/92	S	2,4-Dinitrotoluene	88.62			1.230	1.090	UGG
		LW12	08/13/92	S	2,4-Dinitrotoluene	86.79			9.840	8.540	UGG
		LW12	08/13/92	S	2,4-Dinitrotoluene	88.01			9.840	8.660	UGG
		LW12	08/13/92	S	2-Nitrotoluene (TIC)	92.26			0.530	0.489	UGG
		LW12	08/13/92	S	2-Nitrotoluene (TIC)	92.54			22.800	21.180	UGG
		LW12	08/13/92	S	2-Nitrotoluene (TIC)	93.42			22.800	21.300	UGG
		LW12	08/13/92	S	2-Nitrotoluene (TIC)	94.96			45.600	43.300	UGG
		LW12	08/13/92	S	Nitrobenzene	98.67			3.000	2.960	UGG
		LW12	08/13/92	S	Nitrobenzene	98.33			24.000	23.600	UGG
		LW12	08/13/92	S	Nitrobenzene	98.75			24.000	23.700	UGG
		LW12	08/13/92	S	Cyclonite (RDX)	93.64			1.100	1.030	UGG
		LW12	08/13/92	S	Cyclonite (RDX)	89.76			8.790	7.890	UGG
		LW12	08/13/92	S	Cyclonite (RDX)	89.76			8.790	7.890	UGG
ES	ZYK	LW12	08/26/92	S	1,3,5-Trinitrobenzene	72.09			1.150	0.829	UGG
		LW12	08/26/92	S	1,3,5-Trinitrobenzene	79.07			9.220	7.290	UGG
		LW12	08/26/92	S	1,3,5-Trinitrobenzene	80.80			9.220	7.450	UGG
		LW12	08/26/92	S	2,4,6-Trinitrotoluene	98.18			1.100	1.080	UGG
		LW12	08/26/92	S	2,4,6-Trinitrotoluene	95.80			8.800	8.360	UGG
		LW12	08/26/92	S	2,4,6-Trinitrotoluene	95.57			8.800	8.410	UGG
		LW12	08/26/92	S	2,4-Dinitrotoluene	101.63			1.230	1.250	UGG
		LW12	08/26/92	S	2,4-Dinitrotoluene	95.89			9.840	9.160	UGG
		LW12	08/26/92	S	2,4-Dinitrotoluene	94.82			9.840	9.330	UGG
		LW12	08/26/92	S	2-Nitrotoluene (TIC)	100.38			0.530	0.532	UGG
		LW12	08/26/92	S	2-Nitrotoluene (TIC)	87.72			22.800	20.800	UGG
		LW12	08/26/92	S	2-Nitrotoluene (TIC)	95.61			22.800	21.800	UGG
		LW12	08/26/92	S	2-Nitrotoluene (TIC)	95.61			45.600	43.600	UGG
		LW12	08/26/92	S	Nitrobenzene	105.33			3.000	3.160	UGG
		LW12	08/26/92	S	Nitrobenzene	100.00			24.000	24.000	UGG
		LW12	08/26/92	S	Nitrobenzene	102.08			24.000	24.580	UGG
		LW12	08/26/92	S	Cyclonite (RDX)	102.73			1.100	1.130	UGG
		LW12	08/26/92	S	Cyclonite (RDX)	88.85			8.790	7.810	UGG
		LW12	08/26/92	S	Cyclonite (RDX)	89.99			8.790	7.910	UGG
ES	ZYL	LW12	08/27/92	S	1,3,5-Trinitrobenzene	61.91			1.150	0.712	UGG
		LW12	08/27/92	S	1,3,5-Trinitrobenzene	85.51			9.220	7.780	UGG
		LW12	08/27/92	S	1,3,5-Trinitrobenzene	84.27			9.220	7.770	UGG
		LW12	08/27/92	S	2,4,6-Trinitrotoluene	98.18			1.100	1.080	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CBL, 2 = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits



Tecale-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZYL	LW12	08/27/92	S	2,4,6-Trinitrotoluene	97.50			8.800	8.580	UGG
		LW12	08/27/92	S	2,4,6-Trinitrotoluene	97.84			8.800	8.610	UGG
		LW12	08/27/92	S	2,4-Dinitrotoluene	97.56			1.230	1.280	UGG
		LW12	08/27/92	S	2,4-Dinitrotoluene	94.51			9.840	9.380	UGG
		LW12	08/27/92	S	2,4-Dinitrotoluene	94.92			9.840	9.340	UGG
		LW12	08/27/92	S	2-Nitrotoluene (TIC)	108.30			0.530	0.574	UGG
		LW12	08/27/92	S	2-Nitrotoluene (TIC)	94.74			22.800	21.600	UGG
		LW12	08/27/92	S	2-Nitrotoluene (TIC)	95.18			22.800	21.700	UGG
		LW12	08/27/92	S	2-Nitrotoluene (TIC)	95.39			43.600	43.500	UGG
		LW12	08/27/92	S	Nitrobenzene	106.67			3.000	3.200	UGG
		LW12	08/27/92	S	Nitrobenzene	101.25			24.000	24.300	UGG
		LW12	08/27/92	S	Nitrobenzene	101.25			24.000	24.300	UGG
		LW12	08/27/92	S	Cyclonite (RDX)	106.36			1.100	1.170	UGG
		LW12	08/27/92	S	Cyclonite (RDX)	91.81			8.790	8.070	UGG
		LW12	08/27/92	S	Cyclonite (RDX)	93.29			8.790	8.200	UGG
ES	ZYO	LW12	08/19/92	S	1,3,5-Trinitrobenzene	56.17			1.150	0.646	UGG
		LW12	08/19/92	S	1,3,5-Trinitrobenzene	79.83			9.220	7.360	UGG
		LW12	08/19/92	S	1,3,5-Trinitrobenzene	81.78			9.220	7.540	UGG
		LW12	08/19/92	S	2,4,6-Trinitrotoluene	82.64			1.100	0.909	UGG
		LW12	08/19/92	S	2,4,6-Trinitrotoluene	94.32			8.800	8.300	UGG
		LW12	08/19/92	S	2,4,6-Trinitrotoluene	95.11			8.800	8.370	UGG
		LW12	08/19/92	S	2,4-Dinitrotoluene	81.30			1.230	1.000	UGG
		LW12	08/19/92	S	2,4-Dinitrotoluene	86.59			9.840	8.520	UGG
		LW12	08/19/92	S	2,4-Dinitrotoluene	87.80			9.840	8.640	UGG
		LW12	08/19/92	S	2-Nitrotoluene (TIC)	78.68			0.530	0.417	UGG
		LW12	08/19/92	S	2-Nitrotoluene (TIC)	95.61			22.800	21.800	UGG
		LW12	08/19/92	S	2-Nitrotoluene (TIC)	96.05			22.800	21.900	UGG
		LW12	08/19/92	S	2-Nitrotoluene (TIC)	96.27			43.600	43.900	UGG
		LW12	08/19/92	S	Nitrobenzene	95.80			3.000	2.850	UGG
		LW12	08/19/92	S	Nitrobenzene	98.33			24.000	23.600	UGG
		LW12	08/19/92	S	Nitrobenzene	99.17			24.000	23.800	UGG
		LW12	08/19/92	S	Cyclonite (RDX)	104.55			1.100	1.150	UGG
		LW12	08/19/92	S	Cyclonite (RDX)	91.13			8.790	8.010	UGG
		LW12	08/19/92	S	Cyclonite (RDX)	94.54			8.790	8.310	UGG
ES	ZYP	LW12	08/27/92	S	1,3,5-Trinitrobenzene	81.74			1.150	0.940	UGG
		LW12	08/28/92	S	1,3,5-Trinitrobenzene	79.28			9.220	7.310	UGG
		LW12	08/28/92	S	1,3,5-Trinitrobenzene	82.21			9.220	7.580	UGG
		LW12	08/27/92	S	2,4,6-Trinitrotoluene	101.82			1.100	1.120	UGG
		LW12	08/28/92	S	2,4,6-Trinitrotoluene	94.20			8.800	8.290	UGG
		LW12	08/28/92	S	2,4,6-Trinitrotoluene	95.57			8.800	8.410	UGG
		LW12	08/27/92	S	2,4-Dinitrotoluene	91.87			1.230	1.130	UGG
		LW12	08/28/92	S	2,4-Dinitrotoluene	85.77			9.840	8.440	UGG
		LW12	08/28/92	S	2,4-Dinitrotoluene	86.59			9.840	8.530	UGG
		LW12	08/27/92	S	2-Nitrotoluene (TIC)	103.40			0.530	0.548	UGG
		LW12	08/28/92	S	2-Nitrotoluene (TIC)	92.54			22.800	21.700	UGG
		LW12	08/28/92	S	2-Nitrotoluene (TIC)	92.98			22.800	21.200	UGG
		LW12	08/28/92	S	2-Nitrotoluene (TIC)	93.86			43.600	42.800	UGG
		LW12	08/27/92	S	Nitrobenzene	105.67			3.000	3.110	UGG
		LW12	08/28/92	S	Nitrobenzene	99.17			24.000	23.800	UGG
		LW12	08/28/92	S	Nitrobenzene	99.58			24.000	23.900	UGG
		LW12	08/27/92	S	Cyclonite (RDX)	97.27			1.100	1.070	UGG

Notes for Data Flags: 1 = Results less than CML but greater than CGL, 2 = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

## APPENDIX C-18

Page 44

Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZYP	LW12	08/28/92	S	Cyclonite (RDX)	89.19			8.790	7.840	UG
		LW12	08/28/92	S	Cyclonite (RDX)	89.31			8.790	7.850	UG
ES	ZYS	LW12	08/30/92	S	1,3,5-Trinitrobenzene	80.87			1.150	0.930	UGG
		LW12	08/30/92	S	1,3,5-Trinitrobenzene	78.63			9.220	7.250	UGG
		LW12	08/30/92	S	1,3,5-Trinitrobenzene	81.89			9.220	7.550	UGG
		LW12	08/30/92	S	2,4,6-Trinitrotoluene	102.73			1.100	1.130	UGG
		LW12	08/30/92	S	2,4,6-Trinitrotoluene	94.32			8.800	8.300	UGG
		LW12	08/30/92	S	2,4,6-Trinitrotoluene	96.48			8.800	8.490	UGG
		LW12	08/30/92	S	2,4-Dinitrotoluene	91.87			1.230	1.130	UGG
		LW12	08/30/92	S	2,4-Dinitrotoluene	84.65			9.840	8.330	UGG
		LW12	08/30/92	S	2,4-Dinitrotoluene	85.77			9.840	8.440	UGG
		LW12	08/30/92	S	2-Nitrotoluene (TIC)	102.64			0.530	0.544	UGG
		LW12	08/30/92	S	2-Nitrotoluene (TIC)	92.54			22.800	21.100	UGG
		LW12	08/30/92	S	2-Nitrotoluene (TIC)	92.98			22.800	21.200	UGG
		LW12	08/30/92	S	2-Nitrotoluene (TIC)	93.20			45.600	42.500	UGG
		LW12	08/30/92	S	Nitrobenzene	102.33			3.000	3.070	UGG
		LW12	08/30/92	S	Nitrobenzene	96.67			24.000	23.200	UGG
		LW12	08/30/92	S	Nitrobenzene	98.75			24.000	23.700	UGG
		LW12	08/30/92	S	Cyclonite (RDX)	99.09			1.100	1.090	UGG
		LW12	08/30/92	S	Cyclonite (RDX)	88.40			8.790	7.770	UGG
		LW12	08/30/92	S	Cyclonite (RDX)	90.56			8.790	7.960	UGG
ES	ZYG	LW12	08/31/92	S	1,3,5-Trinitrobenzene	84.61			1.150	0.973	UGG
		LW12	08/31/92	S	1,3,5-Trinitrobenzene	85.83			9.220	7.840	UGG
		LW12	08/31/92	S	1,3,5-Trinitrobenzene	88.50			9.220	8.160	UGG
		LW12	08/31/92	S	2,4,6-Trinitrotoluene	102.73			1.100	1.130	UGG
		LW12	08/31/92	S	2,4,6-Trinitrotoluene	94.89			8.800	8.350	UGG
		LW12	08/31/92	S	2,4,6-Trinitrotoluene	96.48			8.800	8.490	UGG
		LW12	08/31/92	S	2,4-Dinitrotoluene	94.31			1.230	1.160	UGG
		LW12	08/31/92	S	2,4-Dinitrotoluene	86.59			9.840	8.520	UGG
		LW12	08/31/92	S	2,4-Dinitrotoluene	87.40			9.840	8.600	UGG
		LW12	08/31/92	S	2-Nitrotoluene (TIC)	98.11			0.530	0.520	UGG
		LW12	08/31/92	S	2-Nitrotoluene (TIC)	92.98			22.800	21.200	UGG
		LW12	08/31/92	S	2-Nitrotoluene (TIC)	93.42			22.800	21.300	UGG
		LW12	08/31/92	S	2-Nitrotoluene (TIC)	96.93			45.600	44.200	UGG
		LW12	08/31/92	S	Nitrobenzene	106.67			3.000	3.200	UGG
		LW12	08/31/92	S	Nitrobenzene	101.67			24.000	24.400	UGG
		LW12	08/31/92	S	Nitrobenzene	102.50			24.000	24.600	UGG
		LW12	08/31/92	S	Cyclonite (RDX)	94.95			1.100	1.040	UGG
		LW12	08/31/92	S	Cyclonite (RDX)	87.83			8.790	7.720	UGG
		LW12	08/31/92	S	Cyclonite (RDX)	89.42			8.790	7.960	UGG
ES	ZZA	8810	07/29/92	S	Barium	99.10			10.000	9.910	UGL
		8810	07/29/92	S	Barium	94.67			3730.000	3530.000	UGL
		8810	07/29/92	S	Barium	93.48			7300.000	7030.000	UGL
		8810	07/29/92	S	Barium	94.88			7300.000	7030.000	UGL
		8810	07/29/92	S	Calcium	93.30			1000.000	935.000	UGL
		8810	07/29/92	S	Calcium	98.27			7300.000	7370.000	UGL
		8810	07/29/92	S	Calcium	96.88			19000.000	14400.000	UGL
		8810	07/29/92	S	Calcium	96.67			19000.000	14500.000	UGL
		8810	07/29/92	S	Cadmium	85.33			15.000	12.000	UGL
		8810	07/29/92	S	Cadmium	91.30			2000.000	1830.000	UGL

Notes for Data Flags: 1 = Results less than CGL but greater than CGL, 2 = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZZA	SS10	07/29/92	S	Cadmium	91.25			4000.000	3650.000	UGL
		SS10	07/29/92	S	Cadmium	92.25			4000.000	3690.000	UGL
		SS10	07/29/92	S	Cobalt	95.20			50.000	47.600	UGL
		SS10	07/29/92	S	Cobalt	92.50			20000.000	18500.000	UGL
		SS10	07/29/92	S	Cobalt	91.00			40000.000	36400.000	UGL
		SS10	07/29/92	S	Cobalt	91.50			40000.000	36600.000	UGL
		SS10	07/29/92	S	Chromium	89.60			10.000	8.960	UGL
		SS10	07/29/92	S	Chromium	94.50			2000.000	1890.000	UGL
		SS10	07/29/92	S	Chromium	93.50			4000.000	3740.000	UGL
		SS10	07/29/92	S	Chromium	94.25			4000.000	3770.000	UGL
		SS10	07/29/92	S	Copper	100.50			20.000	20.100	UGL
		SS10	07/29/92	S	Copper	93.75			4000.000	3750.000	UGL
		SS10	07/29/92	S	Copper	93.13			8000.000	7450.000	UGL
		SS10	07/29/92	S	Copper	93.88			8000.000	7510.000	UGL
		SS10	07/29/92	S	Magnesium	97.20			1000.000	972.000	UGL
		SS10	07/29/92	S	Magnesium	96.27			7500.000	7220.000	UGL
		SS10	07/29/92	S	Magnesium	96.67			15000.000	14500.000	UGL
		SS10	07/29/92	S	Magnesium	98.00			15000.000	14700.000	UGL
		SS10	07/29/92	S	Manganese	97.60			10.000	9.760	UGL
		SS10	07/29/92	S	Manganese	94.80			750.000	711.000	UGL
		SS10	07/29/92	S	Manganese	93.33			1500.000	1400.000	UGL
		SS10	07/29/92	S	Manganese	94.00			1500.000	1410.000	UGL
		SS10	07/29/92	S	Sodium	103.00			1000.000	1030.000	UGL
		SS10	07/29/92	S	Sodium	96.50			20000.000	19300.000	UGL
		SS10	07/29/92	S	Sodium	95.50			40000.000	38200.000	UGL
		SS10	07/29/92	S	Sodium	96.25			40000.000	38500.000	UGL
		SS10	07/29/92	S	Nickel	95.20			50.000	47.600	UGL
		SS10	07/29/92	S	Nickel	93.17			6000.000	5590.000	UGL
		SS10	07/29/92	S	Nickel	91.67			12000.000	11000.000	UGL
		SS10	07/29/92	S	Nickel	92.50			12000.000	11100.000	UGL
		SS10	07/29/92	S	Zinc	107.25			40.000	42.900	UGL
		SS10	07/29/92	S	Zinc	90.80			7500.000	6810.000	UGL
		SS10	07/29/92	S	Zinc	90.00			15000.000	13500.000	UGL
		SS10	07/29/92	S	Zinc	90.67			15000.000	13600.000	UGL
ES	ZZE	SS10	08/05/92	S	Berium	111.00			10.000	11.100	UGL
		SS10	08/05/92	S	Berium	101.07			3750.000	3790.000	UGL
		SS10	08/05/92	S	Berium	98.80			7500.000	7410.000	UGL
		SS10	08/05/92	S	Berium	100.13			7500.000	7510.000	UGL
		SS10	08/05/92	S	Calcium	98.10			1000.000	981.000	UGL
		SS10	08/05/92	S	Calcium	101.47			7500.000	7610.000	UGL
		SS10	08/05/92	S	Calcium	98.00			15000.000	14700.000	UGL
		SS10	08/05/92	S	Calcium	100.67			15000.000	15100.000	UGL
		SS10	08/05/92	S	Cadmium	90.67			15.000	13.600	UGL
		SS10	08/05/92	S	Cadmium	96.00			2000.000	1900.000	UGL
		SS10	08/05/92	S	Cadmium	93.25			4000.000	3730.000	UGL
		SS10	08/05/92	S	Cadmium	96.00			4000.000	3840.000	UGL
		SS10	08/05/92	S	Cobalt	93.60			50.000	46.000	UGL
		SS10	08/05/92	S	Cobalt	99.00			20000.000	19800.000	UGL
		SS10	08/05/92	S	Cobalt	95.50			40000.000	38200.000	UGL
		SS10	08/05/92	S	Cobalt	98.00			40000.000	39000.000	UGL
		SS10	08/05/92	S	Chromium	127.00			10.000	12.700	UGL
		SS10	08/05/92	S	Chromium	98.50			2000.000	1990.000	UGL

Notes for Data Flags: 1 = Results less than CML but greater than CDB, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Temple-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZZE	SS10	08/05/92	S	Chromium	95.00			4000.000	3800.000	UGL
		SS10	08/05/92	S	Chromium	97.00			4000.000	3880.000	UGL
		SS10	08/05/92	S	Copper	125.50			20.000	25.100	UGL
		SS10	08/05/92	S	Copper	96.75			4000.000	3870.000	UGL
		SS10	08/05/92	S	Copper	94.38			8000.000	7550.000	UGL
		SS10	08/05/92	S	Copper	95.88			8000.000	7670.000	UGL
		SS10	08/05/92	S	Magnesium	95.00			1000.000	950.000	UGL
		SS10	08/05/92	S	Magnesium	103.47			7500.000	7760.000	UGL
		SS10	08/05/92	S	Magnesium	100.00			15000.000	15000.000	UGL
		SS10	08/05/92	S	Magnesium	102.00			15000.000	15300.000	UGL
		SS10	08/05/92	S	Manganese	96.70			10.000	9.670	UGL
		SS10	08/05/92	S	Manganese	100.00			750.000	750.000	UGL
		SS10	08/05/92	S	Manganese	96.67			1500.000	1450.000	UGL
		SS10	08/05/92	S	Manganese	99.33			1500.000	1490.000	UGL
		SS10	08/05/92	S	Sodium	101.00			1000.000	1010.000	UGL
		SS10	08/05/92	S	Sodium	101.00			20000.000	20200.000	UGL
		SS10	08/05/92	S	Sodium	98.25			40000.000	39300.000	UGL
		SS10	08/05/92	S	Sodium	99.50			40000.000	39800.000	UGL
		SS10	08/05/92	S	Nickel	97.60			50.000	48.800	UGL
		SS10	08/05/92	S	Nickel	97.33			6000.000	5840.000	UGL
		SS10	08/05/92	S	Nickel	94.17			12000.000	11300.000	UGL
		SS10	08/05/92	S	Nickel	95.83			12000.000	11900.000	UGL
		SS10	08/05/92	S	Zinc	103.25			40.000	41.300	UGL
		SS10	08/05/92	S	Zinc	95.60			7500.000	7170.000	UGL
		SS10	08/05/92	S	Zinc	92.00			15000.000	13800.000	UGL
		SS10	08/05/92	S	Zinc	94.67			15000.000	14200.000	UGL
ES	ZZJ	SS10	08/19/92	S	Barium	101.00			10.000	10.100	UGL
		SS10	08/19/92	S	Barium	95.73			3750.000	3590.000	UGL
		SS10	08/19/92	S	Barium	97.87			7500.000	7340.000	UGL
		SS10	08/19/92	S	Barium	98.27			7500.000	7370.000	UGL
		SS10	08/19/92	S	Calcium	102.00			1000.000	1020.000	UGL
		SS10	08/19/92	S	Calcium	98.13			7500.000	7360.000	UGL
		SS10	08/19/92	S	Calcium	99.33			15000.000	14900.000	UGL
		SS10	08/19/92	S	Calcium	99.33			15000.000	14900.000	UGL
		SS10	08/19/92	S	Cadmium	94.67			15.000	14.200	UGL
		SS10	08/19/92	S	Cadmium	95.50			2000.000	1910.000	UGL
		SS10	08/19/92	S	Cadmium	96.50			4000.000	3860.000	UGL
		SS10	08/19/92	S	Cadmium	96.75			4000.000	3870.000	UGL
		SS10	08/19/92	S	Cobalt	104.20			50.000	52.100	UGL
		SS10	08/19/92	S	Cobalt	95.00			20000.000	19000.000	UGL
		SS10	08/19/92	S	Cobalt	96.75			40000.000	38700.000	UGL
		SS10	08/19/92	S	Cobalt	96.75			40000.000	38700.000	UGL
		SS10	08/19/92	S	Chromium	87.80			10.000	8.780	UGL
		SS10	08/19/92	S	Chromium	95.00			2000.000	1900.000	UGL
		SS10	08/19/92	S	Chromium	97.00			4000.000	3880.000	UGL
		SS10	08/19/92	S	Chromium	97.25			4000.000	3890.000	UGL
		SS10	08/19/92	S	Copper	96.50			20.000	19.300	UGL
		SS10	08/19/92	S	Copper	95.75			4000.000	3830.000	UGL
		SS10	08/19/92	S	Copper	97.75			8000.000	7820.000	UGL
		SS10	08/19/92	S	Copper	98.25			8000.000	7860.000	UGL
		SS10	08/19/92	S	Magnesium	105.00			1000.000	1050.000	UGL
		SS10	08/19/92	S	Magnesium	97.87			7500.000	7340.000	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CBL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZZJ	SS10	08/19/92	S	Magnesium	98.00			15000.000	14700.000	UGL
		SS10	08/19/92	S	Magnesium	98.67			15000.000	14800.000	UGL
		SS10	08/19/92	S	Manganese	103.00			10.000	10.300	UGL
		SS10	08/19/92	S	Manganese	95.60			7500.000	717.000	UGL
		SS10	08/19/92	S	Manganese	97.33			1500.000	1460.000	UGL
		SS10	08/19/92	S	Manganese	97.33			1500.000	1460.000	UGL
		SS10	08/19/92	S	Sodium	105.00			1000.000	1050.000	UGL
		SS10	08/19/92	S	Sodium	96.50			20000.000	19300.000	UGL
		SS10	08/19/92	S	Sodium	97.00			40000.000	38800.000	UGL
		SS10	08/19/92	S	Sodium	97.50			40000.000	39000.000	UGL
		SS10	08/19/92	S	Nickel	95.00			50.000	47.500	UGL
		SS10	08/19/92	S	Nickel	95.00			6000.000	5700.000	UGL
		SS10	08/19/92	S	Nickel	95.83			12000.000	11500.000	UGL
		SS10	08/19/92	S	Nickel	96.67			12000.000	11600.000	UGL
		SS10	08/19/92	S	Zinc	96.25			40.000	38.500	UGL
		SS10	08/19/92	S	Zinc	94.93			7500.000	7120.000	UGL
		SS10	08/19/92	S	Zinc	96.00			15000.000	14400.000	UGL
		SS10	08/19/92	S	Zinc	96.00			15000.000	14400.000	UGL
ES	ZZK	SS10	08/13/92	S	Barium	109.00			10.000	10.900	UGL
		SS10	08/13/92	S	Barium	97.60			3750.000	3660.000	UGL
		SS10	08/13/92	S	Barium	92.80			7500.000	6960.000	UGL
		SS10	08/13/92	S	Barium	96.80			7500.000	7260.000	UGL
		SS10	08/13/92	S	Calcium	101.00			1000.000	1010.000	UGL
		SS10	08/13/92	S	Calcium	99.20			7500.000	7440.000	UGL
		SS10	08/13/92	S	Calcium	95.33			15000.000	14300.000	UGL
		SS10	08/13/92	S	Calcium	98.00			15000.000	14700.000	UGL
		SS10	08/13/92	S	Cadmium	97.33			15.000	14.600	UGL
		SS10	08/13/92	S	Cadmium	95.50			2000.000	1910.000	UGL
		SS10	08/13/92	S	Cadmium	92.50			4000.000	3700.000	UGL
		SS10	08/13/92	S	Cadmium	94.50			4000.000	3780.000	UGL
		SS10	08/13/92	S	Cobalt	103.40			50.000	51.700	UGL
		SS10	08/13/92	S	Cobalt	97.00			20000.000	19400.000	UGL
		SS10	08/13/92	S	Cobalt	92.50			40000.000	37000.000	UGL
		SS10	08/13/92	S	Cobalt	95.75			40000.000	38300.000	UGL
		SS10	08/13/92	S	Chromium	103.00			10.000	10.300	UGL
		SS10	08/13/92	S	Chromium	97.00			2000.000	1940.000	UGL
		SS10	08/13/92	S	Chromium	93.50			4000.000	3740.000	UGL
		SS10	08/13/92	S	Chromium	96.50			4000.000	3840.000	UGL
		SS10	08/13/92	S	Copper	104.00			20.000	20.800	UGL
		SS10	08/13/92	S	Copper	95.50			4000.000	3820.000	UGL
		SS10	08/13/92	S	Copper	91.50			8000.000	7320.000	UGL
		SS10	08/13/92	S	Copper	94.75			8000.000	7580.000	UGL
		SS10	08/13/92	S	Magnesium	97.80			1000.000	978.000	UGL
		SS10	08/13/92	S	Magnesium	100.13			7500.000	7510.000	UGL
		SS10	08/13/92	S	Magnesium	96.67			15000.000	14500.000	UGL
		SS10	08/13/92	S	Magnesium	99.33			15000.000	14900.000	UGL
		SS10	08/13/92	S	Manganese	97.50			10.000	9.750	UGL
		SS10	08/13/92	S	Manganese	97.33			750.000	730.000	UGL
		SS10	08/13/92	S	Manganese	93.33			1500.000	1400.000	UGL
		SS10	08/13/92	S	Manganese	96.67			1500.000	1450.000	UGL
		SS10	08/13/92	S	Sodium	90.20			1000.000	902.000	UGL
		SS10	08/13/92	S	Sodium	97.50			20000.000	19500.000	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CGL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

## APPENDIX C-18

Page: 70

Tooele-North Phase I RFI  
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concn.	Recovered Concn.	Units
ES	ZZK	SS10	08/13/92	S	Sodium	94.25			40000.000	37700.000	UGL
		SS10	08/13/92	S	Sodium	97.00			40000.000	38800.000	UGL
		SS10	08/13/92	S	Nickel	103.20			50.000	51.600	UGL
		SS10	08/13/92	S	Nickel	97.17			6000.000	5830.000	UGL
		SS10	08/13/92	S	Nickel	92.50			12000.000	11100.000	UGL
		SS10	08/13/92	S	Nickel	95.83			12000.000	11500.000	UGL
		SS10	08/13/92	S	Zinc	111.50			40.000	44.600	UGL
		SS10	08/13/92	S	Zinc	94.53			7500.000	7090.000	UGL
		SS10	08/13/92	S	Zinc	91.33			15000.000	13700.000	UGL
		SS10	08/13/92	S	Zinc	93.33			15000.000	14000.000	UGL
ES	ZZP	SS10	09/02/92	S	Barium	113.00			10.000	11.300	UGL
		SS10	09/02/92	S	Barium	96.27			3750.000	3610.000	UGL
		SS10	09/02/92	S	Barium	95.87			7500.000	7190.000	UGL
		SS10	09/02/92	S	Barium	96.53			7500.000	7240.000	UGL
		SS10	09/02/92	S	Cadmium	92.00			15.000	13.800	UGL
		SS10	09/02/92	S	Cadmium	93.00			2000.000	1860.000	UGL
		SS10	09/02/92	S	Cadmium	93.00			4000.000	3720.000	UGL
		SS10	09/02/92	S	Cadmium	94.25			4000.000	3770.000	UGL
		SS10	09/02/92	S	Chromium	88.60			10.000	8.860	UGL
		SS10	09/02/92	S	Chromium	95.50			2000.000	1910.000	UGL
		SS10	09/02/92	S	Chromium	94.50			4000.000	3780.000	UGL
		SS10	09/02/92	S	Chromium	95.75			4000.000	3830.000	UGL
		SS10	09/02/92	S	Copper	99.00			20.000	19.800	UGL
		SS10	09/02/92	S	Copper	95.25			4000.000	3810.000	UGL
		SS10	09/02/92	S	Copper	95.38			8000.000	7630.000	UGL
		SS10	09/02/92	S	Copper	96.63			8000.000	7730.000	UGL
		SS10	09/02/92	S	Manganese	112.00			10.000	11.200	UGL
		SS10	09/02/92	S	Manganese	95.60			750.000	717.000	UGL
		SS10	09/02/92	S	Manganese	94.67			1500.000	1420.000	UGL
		SS10	09/02/92	S	Manganese	95.33			1500.000	1430.000	UGL
		SS10	09/02/92	S	Nickel	98.00			50.000	49.000	UGL
		SS10	09/02/92	S	Nickel	95.67			6000.000	5740.000	UGL
		SS10	09/02/92	S	Nickel	94.17			12000.000	11300.000	UGL
		SS10	09/02/92	S	Nickel	95.83			12000.000	11500.000	UGL
		SS10	09/02/92	S	Zinc	111.75			40.000	44.700	UGL
		SS10	09/02/92	S	Zinc	93.20			7500.000	6990.000	UGL
		SS10	09/02/92	S	Zinc	92.00			15000.000	13800.000	UGL
		SS10	09/02/92	S	Zinc	94.00			15000.000	14100.000	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

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## **Appendix D**

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**MONTGOMERY WATSON**

## **APPENDIX D**

### **GROUNDWATER AND SURFACE WATER SAMPLING AND MEASUREMENT DATA**

#### **D.1 INTRODUCTION**

**D.1.0.1.** This appendix presents measurement data generated during investigations of the groundwater and surface water at TEAD-N during the RFI field activities. The data included here pertain to the measurements of the physical characteristics of the subject groundwater and surface water, and do not include the analyzed chemical parameters. The analytical data are included in the data summary tables in Section 5.0 of this report, and also in Appendix K.

**D.1.0.2.** The data in this appendix are arranged as follows:

<u>Description</u>	<u>Page</u>
Groundwater/Surface Water Sampling Logs-SWMU 14	D-6 to D-17
Groundwater/Surface Water Logs-SWMU 45	D-18 to D-20
Groundwater/Surface Water Log-SWMU 47	D-21 to D-22
Groundwater Elevation Measurement Data (Table D-1)	D-23

#### **D.2 SCOPE OF INVESTIGATIONS**

**D.2.0.1.** The scope of the RFI groundwater and surface water investigations during the project consisted of the following:

- Surface water sampling and measurement at the Sewage Lagoons, the Stormwater Discharge Area, and the Boiler Blowdown Discharge Areas (SWMUs 14, 45, and 47, respectively). A total of seven surface water samples were collected; two at the Sewage Lagoons, three at the Stormwater Discharge Area, and two from the Boiler Blowdown Areas.
- Two rounds of groundwater sampling and measurement at five monitoring wells near the Sewage Lagoons (SWMU 14)



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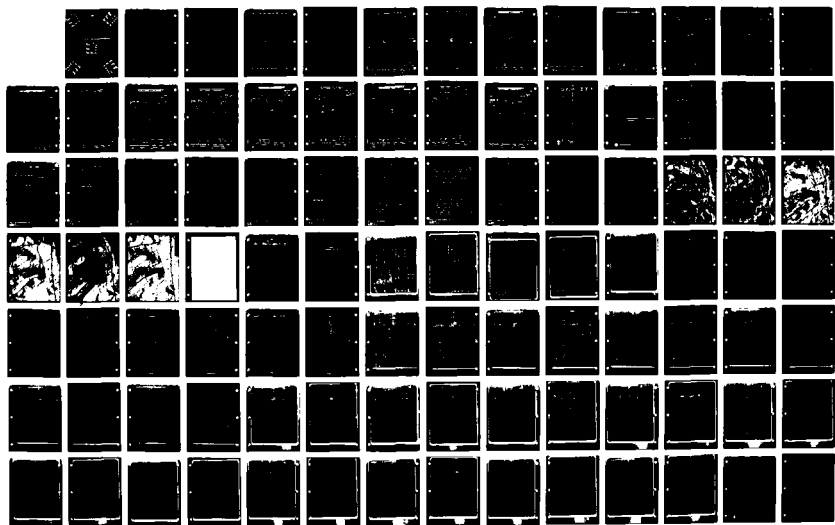
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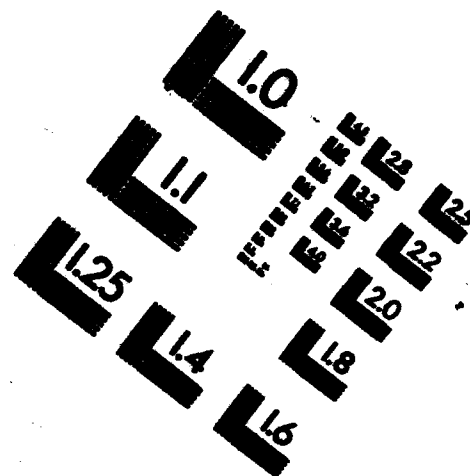
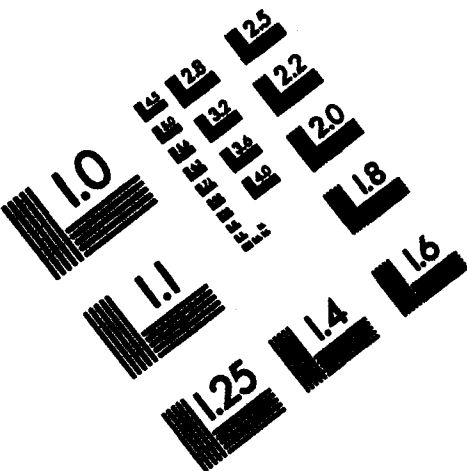




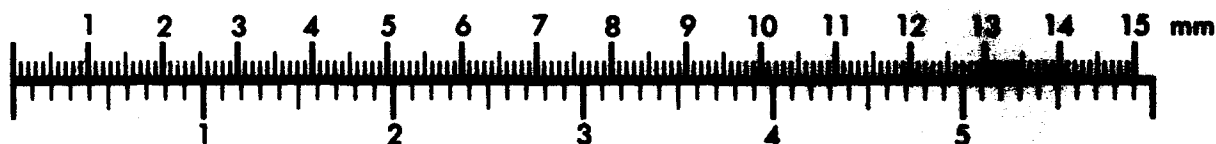
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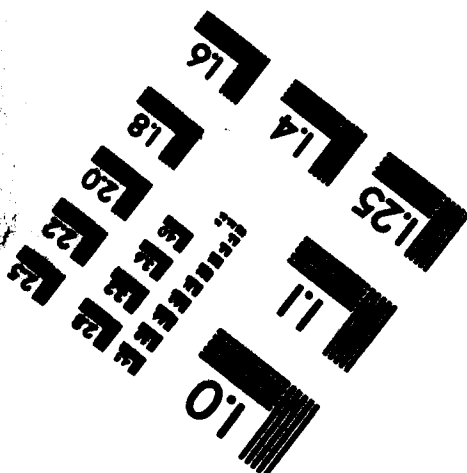
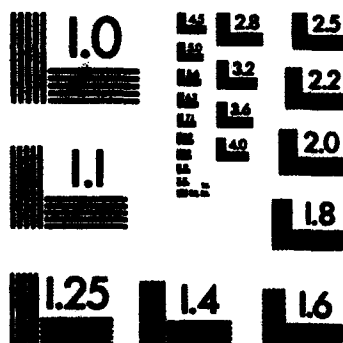
1100 Wayne Avenue, Suite 1100  
Silver Spring, Maryland 20910  
301/587-8202



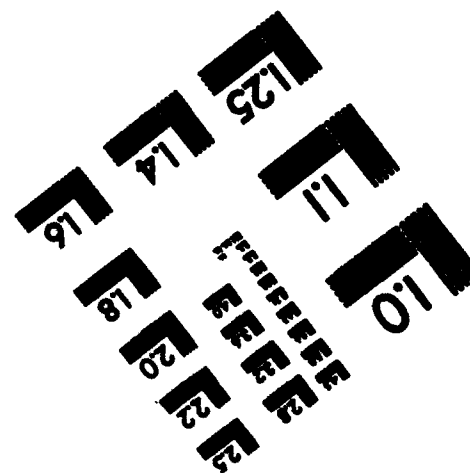
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BY APPLIED IMAGE, INC.



- A facility-wide groundwater elevation investigation, which consisted of collecting groundwater elevations from wells located across the TEAD-N facility during the approximate groundwater seasonal high and low, and generating updated groundwater elevation contours from this data.

## **D.3 GROUNDWATER/SURFACE WATER SAMPLING DATA**

### **D.3.1. Description of Groundwater/Surface Water Sampling Log**

**D.3.1.1.** The Groundwater/Surface Water Sampling Logs which are included in this appendix were completed in the field by JMM personnel at the time of sample collection. The logs consist of:

- Heading information which shows the sample location, date, sampling personnel, a brief weather description, and a measurement summary, which includes depth-to-water information
- The sampling summary, where the actual field measurements are recorded. Measurements made on the collected samples included pH, specific conductivity, temperature (°C.), dissolved oxygen (mg/L), flow rate (if applicable), organic vapor measurements (also required for health and safety reasons), and general comments regarding the water sample.
- Notations of the instrumentation and calibration solutions used
- Analytes for which the collected sample was submitted.

**D.3.1.2.** Sampling logs from all groundwater and surface water samples collected during the field work are included here. These consist of 10 groundwater and two surface water samples from the Sewage Lagoons (SWMU 14), three surface water samples collected from the Stormwater Discharge Area (SWMU 45), and two surface water samples collected from the Boiler Blowdown Areas (SWMU 47).

### **D.3.2. Summary of Groundwater and Surface Water Physical Characteristics**

**D.3.2.1. Groundwater.** The five wells which were sampled at the sewage lagoons consisted of N-135-90, N-134-90, B-1, N-136-90, and A-3. Well N-136-90 was substituted for

well N-117-88, which appears in the project Data Collection Quality Assurance Plan (JMM, 1992), when it was discovered that N-117-88 has a pump stuck in the well. The locations of these wells in relation to the Sewage Lagoons is shown in Section 5.9 of this report (see Figures 5-9-1 through 5-9-4).

**D.3.2.2. Results from the collected groundwater measurements from the Sewage Lagoon (SWMU 14) vicinity can be summarized as follows:**

1. The pH values of the groundwater near the sewage lagoons at SWMU 14 are generally neutral to very slightly alkaline. The measured values ranged from 7.6 to 7.8 during the July, 1992 sampling round, and from 7.0 to 7.1 during the February, 1993 round.
2. The specific conductivity, a measure of the type and concentration of dissolved constituents present, ranged from 1100 to 1820  $\mu\text{mhos}$ . This range is typical for potable subsurface water, which usually ranges from 30 to 2000  $\mu\text{mhos}$ . Sea water commonly measures 45,000 to 55,000  $\mu\text{mhos}$ . The well showing the highest conductivity measurements (during both sampling events) is N-136-90, which is located up-gradient of the sewage lagoons and down-gradient of the sanitary landfill.
3. The measured temperatures ranged from 13.7 to 18.5  $^{\circ}\text{C}$  during the summer, 1992 sampling round, and decreased several degrees as measured during the winter, 1993 round. These temperatures ranged from 6.7 to 8.9  $^{\circ}\text{C}$ .
4. The dissolved oxygen measured in the groundwater was over a range of 5.30 to 6.82 mg/L. The lowest dissolved oxygen measurements were obtained for well B-1, which is down-gradient and proximal to the sewage lagoons.
5. No organic vapors were detected in conjunction with the groundwater sampling.

**D.3.2.3. Surface Water.** A total of seven surface water samples were collected during the field investigation. As with the groundwater samples collected, the physical parameters were measured and recorded on the Sampling Logs. Surface water samples were collected from the Sewage Lagoons (SWMU 14), collected water at the Stormwater Discharge Area

(SWMU 48), and boiler blowdown collection areas at SWMU 47. Sample locations are shown under the respective SWMUs in Section 5.0 of this report.

**D.3.2.4. Results of the measurement data from the surface water sampling can be summarized as follows:**

1. The pH values range from 7.77 to 10.6. The high figure was obtained from the boiler blowdown collection sample, which is not unusual. The remainder of the pH values range from 7.77 to 8.1.
2. The specific conductivity values show a range of 900 to 5,000  $\mu\text{mhos}$ . As with the pH, the high, outlying measurement was obtained from the boiler blowdown effluent at Building 610. The low figure of 900  $\mu\text{mhos}$  was obtained from surface water sampled at a discharge point west of Building 691 in February, 1993.
3. The temperatures measured during the summer 1992 are within a normal range expected from surface waters in the summer; they range from 18.6 to 24.3 °C. The exception again is the boiler blowdown water at Building 610, at 30.3 °C. An attempt was made during sampling of a discharge point west of Building 691 in February, 1993 to measure the temperature and pH of the sampled surface water, but the low temperature of the water put the field instrument out of range.
4. The dissolved oxygen measurements (with the exception of the boiler blowdown water) ranged from 2.05 to 6.25 mg/L, and were higher for the samples collected at the sewage lagoons. A value of 0.20-0.25 mg/L was measured for the boiler blowdown water sample at Building 610.
5. No organic vapor readings above the detection limit were recorded during surface water sampling activities.

#### **D4 GROUNDWATER ELEVATION MEASUREMENT DATA**

**D.4.0.1. On June 9, 1992, JEM personnel conducted the first of two rounds of groundwater elevation surveys scheduled for the RFI, measuring the depth to water of 45 groundwater wells across the TEAD-N facility. This first round of measurements was conducted :**

correspond to the expected seasonal groundwater high. A second round of measurements, scheduled for the expected seasonal low, was completed in late January, 1993. All measurements were made to the nearest 0.01 ft. (0.12 in.) using an electronic water level indicator, and were referenced to the top of the inside well casing. To minimize short-term groundwater surface fluctuations, all elevation measurements were conducted in a single 24-hour period during the June, 1992 round. However, due to the snow cover and associated access problems during the January round, measurements were completed in a 72-hour period.

D.4.0.2. The data generated from these measurements are shown in Table D-1. The groundwater elevation contour map generated from the groundwater measurements is included in this report in Section 2, as Figure 2-5.

D.4.0.3. The results of these groundwater measurements show an overall lowering of the groundwater surface across the TEAD-N facility by an average of about 8 to 15 feet, as compared with measurements prior to 1992. The change of groundwater levels from the seasonal high during the summer, 1992 to seasonal low in the winter, 1993 showed a general 1 to 2-foot decline of groundwater levels during the period.

**James M. Montgomery, Consulting Engineers, Inc.**

SWMU Number 14

Sample Location 175-90

Surface Water/Groundwater Groundwater

Log Number N 12590

**Sampling Personnel** *6 individuals*

Date 7/10/92

Weather Cloudy 100° (55-90)

### MEASUREMENT SUMMARY:

Calculated Purge Volume 202 gallons Total Depth 253.5 Borehole or 10"

Depth to water 230.96 Time                      Measuring point 1

Final pH \_\_\_\_\_ Final SC \_\_\_\_\_ Final Temp(°C) \_\_\_\_\_

### SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump \_\_\_\_\_ Portable Submersible Pump \_\_\_\_\_ Bailer 13 04

Pump Started 15:30 Pump Stopped \_\_\_\_\_ Total gallons \_\_\_\_\_ Individual Sample Container \_\_\_\_\_

Time	pH	SC	Temp	Flow rate (gpm)	DO (%)	Comments
------	----	----	------	-----------------	--------	----------

\_\_\_\_\_

1535 7.19 1350 15.2 15 gal. 6.32 Drum - water

15:50 7.68 1380 14.7 40 and 6-10 clearing slightly

16:10	366	1330	5.95	0.10
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11-40	3.8	1372	14.8	136.4	1.2	1.1	22
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10:40 4:01 1330 14:0 100 gals. 6-01 Sampling in 30 min.

7.60 sample \_\_\_\_\_

47:25   7.62   1400   15.2   135m   5.93

1. *Journal of Management Studies*, 1996, 33, 1, 1-14.

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11. *Journal of the American Medical Association*, 2000; 283: 2689-2693.

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**INSTRUMENTATION:** pH Meter: Orion ☒ Cole-Parmer ☐ Calibration Buffers: 4 ☐ 7 ☒ 10 ☐

Specific Conductivity Meter: Markson ☐ YSI ☒ Standard Solution 0.00 unknown

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ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED

SAMPLES COLLECTED AND TIME: FISHED IN: Y FISHES:        FISHES:        CYCLES: Y

VOCs X Disinfectants \_\_\_\_\_ Nitrate/Nitrite and Phosphate X

**SVOCs** ☒ **TRPH** ☒ **Arsenic** ☒ **Explosives** ☐

31st Dec 1972

— 2 —

\_\_\_\_\_

**SWMU Number** 14

Log Number N 134 90

Weather CLEAR + HOT / 85-90

Calculated Purge Volume \_\_\_\_\_ gallons      Total Depth 208.87      Borehole Diameter 10"  
Depth to water 186.74      Time 14:25      Measuring point TOC NORTH  
Final pH 7.59      Final SC 1500      Final Temp (°C) 16.6

Casing evacuated with: Dedicated Pump \_\_\_\_\_ Portable Submersible Pump \_\_\_\_\_ Bailer ☒ \_\_\_\_\_

Pump Started 10:40 Pump Stopped 11:25 Total gallons 350 Individual Sample Container \_\_\_\_\_

**INSTRUMENTATION:** pH Meter: Orion ☒ Cole-Parmer ☐ Calibration Buffers: 4 ☐ 7 ☐ 10 ☐

**Specific Conductivity Meter:** Markson ☐ YSI ☐ Standard Solution \_\_\_\_\_ umhos/cm

**SAMPLES COLLECTED AND TIME:** Filtered Metals ☒ Pesticides \_\_\_\_\_ Herbicides \_\_\_\_\_ Cyanide ☒

**VOCS** ☒ **Dioxins/Furans** ☐ **Nitrate/Nitrate and Phosphate** ☒

**SVOCS**    **X**                    **TRPH**    **X**                    **Anions**    **X**                    **Explosives**

~~Sample ② 14:50~~



# GROUNDWATER/SURFACE WATER SAMPLING LOG

James M. Montgomery, Consulting Engineers, Inc.

MW-14-B1

SWMU Number 14

Sample Location C-1-N Surface Water/Groundwater GW Log Number \_\_\_\_\_  
 (Use: Well name/Log number)  
 Sampling Personnel Belt Date 7/11/92 Weather Cloudy / hot

## MEASUREMENT SUMMARY:

Calculated Purge Volume 375 gallons Total Depth 303' Borehole Diameter 4.0"  
 Depth to water 205.45' Time 16:30 Measuring point TOEN  
 Final pH 7.8 Final SC 1260 Final Temp (°C) 14.2

## SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump \_\_\_\_\_ Portable Submersible Pump \_\_\_\_\_ Bailor X  
 Pump Started \_\_\_\_\_ Pump Stopped \_\_\_\_\_ Total gallons \_\_\_\_\_ Individual Sample Container \_\_\_\_\_

Time	pH	SC	Temp	Flow rate (gpm)	DO	Comments	DU4
12:10	7.8	1250	14.2	10 gallons	5.32	turbid, rust colored.	0
12:40	7.8	1260	14.0	10 gallons	5.34	clearing slightly	0
14:00	7.8	1260	14.2	220 gal	5.38	"	0
14:15	7.8	1240	13.7	300 gal	5.65	no change	0
15:10	7.8	1260	14.0	420 gal	5.28	clearer	0
16:30	7.8	1260	14.2	550 gal	5.30		0

INSTRUMENTATION: pH Meter: Orion ☒ Cole-Parmer ☐ Calibration Buffers: 4 ☐ 7 ☒ 10 ☒

Specific Conductivity Meter: Markon ☐ YSI ☒ Standard Solution 1.00 umhos/cm  
 YSI DO meter

SAMPLES COLLECTED AND TIME: Filtered Metals X Pesticides \_\_\_\_\_ Herbicides \_\_\_\_\_ Cyanide X  
 VOCs X Dioxins/Furans \_\_\_\_\_ Nitrate/Nitrite and Phosphate X  
 SVOCs X TRPH X Anions X Explosives \_\_\_\_\_

Sample @ 16:30





**James M. Montgomery, Consulting Engineers, Inc.**

**SWMU Number** 4

Sample Location SEWARD Lagoon Surface Water/Groundwater SURFACE WATER Log Number SN-14-001  
(Use: Well name/Log number)  
Sampling Personnel B. HOLANAY Date 7/13/92 Weather HOT / 85° CLOUDY  
F. MAGLON 7:20-7:25 AM

**MEASUREMENT SUMMARY:**

Calculated Purge Volume \_\_\_\_\_ gallons      Total Depth \_\_\_\_\_      Borehole Diameter \_\_\_\_\_  
 Depth to water \_\_\_\_\_      Time \_\_\_\_\_      Measuring point \_\_\_\_\_  
 Final pH \_\_\_\_\_      Final SC \_\_\_\_\_      Final Temp (°C) \_\_\_\_\_

### SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump \_\_\_\_\_ Portable Submersible Pump \_\_\_\_\_ Bailer \_\_\_\_\_

**Pump Started**\_\_\_\_\_ **Pump Stopped**\_\_\_\_\_ **Total gallons**\_\_\_\_\_ **Individual Sample Container**\_\_\_\_\_

[illegible]

**INSTRUMENTATION:** pH Meter: Orion ☒ Cole-Parmer ☐ Calibration Buffers: 4 ☒ 7 ☐ 10 ☒

Specific Conductivity Meter: Markson ☐ YSI ☒ Standard Solution 1000 umhos/cm

SAMPLES COLLECTED AND TIME: Filtered Metals X Pesticides      Herbicides      Cyanide X  
VOCS X Dioxins/Furans      Nitrate/Nitrate and Phosphate X  
SVOCs X TRPH      Anions X Explosives

## 44

**SWMU Number** 14

Sample Location SEWAGE Lagoon Surface Water/Groundwater SURFACE WATER Log Number SW-14-002  
(Use: Well name/Log number)  
Sampling Personnel B. HOLDEN Date 7/13/92 Weather 101 (85°) CLEAR  
+ WINDY (20-25 mph)

### MEASUREMENT SUMMARY:

Calculated Purge Volume \_\_\_\_\_ gallons      Total Depth \_\_\_\_\_      Borehole Diameter \_\_\_\_\_  
 Depth to water \_\_\_\_\_      Time \_\_\_\_\_      Measuring point ~~107 (25)~~ 60 FPH  
 Final pH \_\_\_\_\_      Final SC \_\_\_\_\_      Final Temp (°C) \_\_\_\_\_

### SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump \_\_\_\_\_ Portable Submersible Pump \_\_\_\_\_ Bailer \_\_\_\_\_  
Pump Started \_\_\_\_\_ Pump Stopped \_\_\_\_\_ Total gallons \_\_\_\_\_ Individual Sample Container \_\_\_\_\_

[illegible]

INSTRUMENTATION: pH Meter: Orion ☒ Cole-Parmer ☐ Calibration Buffers: 4 ☒ 7 ☐ 10 ☒

Specific Conductivity Meter: Markson ☐ YSI ☒ Standard Solution 1000 umhos/cm  
 #00233

**SAMPLES COLLECTED AND TIME:** Filtered Metals X Pesticides      Herbicides      Cyanide X  
VOCS X Dioxin/Furans      Nitrate/Nitrate and Phosphate X  
SVOCs X TRPH      Anions X Explosives

# **GROUNDWATER/SURFACE WATER SAMPLING LOG** **James M. Montgomery, Consulting Engineers, Inc.**

Sum 14  
N-135-40

Sample Location N-135-40 Surface Water/Groundwater GW Log Number \_\_\_\_\_  
 (Use Well name/log number)  
 Sampling Personnel p.m./BKH Date 2-3-93 Weather Sunny, 35°F

## **MEASUREMENT SUMMARY:**

Calculated Purge Volume 63 gallons Total Depth 253 Borehole Diameter 4 1/2" (rising)  
 Depth to water 231.7' Time 1420 Measuring point TC6  
 Final pH 7.47 Final SC 1300 Final Temp (°C) 7.3°

## **SAMPLING SUMMARY:**

Casing evacuated with: Dedicated Pump \_\_\_\_\_ Portable Submersible Pump \_\_\_\_\_ Bailer ☒  
 Pump Started \_\_\_\_\_ Pump Stopped \_\_\_\_\_ Total gallons 75 Individual Sample Container \_\_\_\_\_

Time	pH	SC	Temp	Flow rate (gpm)	Comments
<u>1435</u>	<u>7.07</u>	<u>1300</u>	<u>7.7°</u>		<u>Initial ~ cloudy, lt. yellow, (Brown)</u>
<u>1450</u>	<u>7.01</u>	<u>1300</u>	<u>7.6°</u>		<u>@ 15 gals ~ "</u>
<u>1500</u>	<u>7.01</u>	<u>1250</u>	<u>7.0°</u>		<u>@ 30 gals ~ "</u>
<u>1505</u>	<u>7.12</u>	<u>1400</u>	<u>7.9°</u>		<u>@ 40 gals ~ "</u>
<u>1515</u>	<u>7.08</u>	<u>1300</u>	<u>7.1°</u>		<u>@ 50 gals ~ "</u>
<u>1525</u>	<u>7.11</u>	<u>1350</u>	<u>7.1°</u>		<u>@ 60 gals ~ "</u>
<u>1530</u>	<u>7.10</u>	<u>1350</u>	<u>7.1°</u>		<u>@ 70 gals ~ "</u>
<u>1540</u>	<u>7.08</u>	<u>1300</u>	<u>7.3°</u>		<u>@ 80 gals ~ "</u>

INSTRUMENTATION: pH Meter: Orion ☐ Cole-Parmer ☒ Calibration Buffers: 4 ☒ 7 ☒ 10 ☐

Specific Conductivity Meter: Markon ☐ YSI ☒ Standard Solution 1400 umhos/cm

SAMPLES COLLECTED AND TIME: Filtered Metals ☒ Pesticides \_\_\_\_\_ Herbicides \_\_\_\_\_ Cyanide ☒  
 VOCs ☒ Dioxins/Furans \_\_\_\_\_ Nitrate/Nitrite and Phosphate ☒  
 SVOCs ☒ TRPH ☒ Anions ☒ Explosives \_\_\_\_\_

# GROUNDWATER/SURFACE WATER SAMPLING LOG

James M. Montgomery, Consulting Engineers, Inc.

Site No. 14

N-134-90

Sample Location N-134-90 Surface Water/Groundwater GW Log Number \_\_\_\_\_  
(Use Well numbering system)  
Sampling Personnel DK Date 2-5-92 Weather Hot, 25°F, Breezy

## MEASUREMENT SUMMARY:

Calculated Purge Volume 79 gallons Total Depth 208.9' Borehole Diameter 4 1/2" Comp  
Depth to water 182.4' Time 5:40 Measuring point -02  
Final pH 7.22 Final SC 1350 Final Temp (°C) 7.0°

## SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump \_\_\_\_\_ Portable Submersible Pump \_\_\_\_\_ 15' Baller ☒  
Pump Started \_\_\_\_\_ Pump Stopped \_\_\_\_\_ Total gallons 115 Individual Sample Container \_\_\_\_\_

Time	pH	SC	Temp	Flow rate (gpm)	Comments
0925	6.84	1500	9.3°	1.2 l	yellow - 12mm, S. 11g.
0935	6.86	1400	6.3°	15 gals	"
0952	6.90	1400	7.3°	30 gals	"
0955	7.05	1450	7.1°	~ 48 gals	"
1000	7.22	1400	7.4°	~ 65 gals	"
1005	7.40	1300	7.0°	~ 80 gals	"
1020	7.35	1400	7.5°	~ 95 gals	"
1025	7.20	1350	7.0°	~ 115 gals	"

INSTRUMENTATION: pH Meter: Orion ☐ Cole-Parmer ☒ Calibration Buffers: 4 ☒ 7 ☒ 10 ☒

Specific Conductivity Meter: Markon ☐ YSI ☒ Standard Solution 414 umhos/cm

SAMPLES COLLECTED AND TIME: Filtered Metals ☒ Pesticides ☒ Herbicides ☒ Cyanide ☒  
VOCS ☒ Dioxin/Furans ☒ Nitrate/Nitrite and Phosphate ☒  
SVOCs ☒ TRPH ☒ Anions ☒ Explosives ☒

PROJECT NO.

14  
A-3

MEASUREMENT SUMMARY:  
Calculated Purge Volume 4R gallons Total Depth 239.5' Borehole Diameter 5" casing  
Depth to water 231.2' Time 12:10 Measuring point TOC  
Final pH 7.05 Final SC 12.05 Final Temp (°C) 8.9°

**PROJECT**

SAMPLES COLLECTED AND TIME: Filtered Metals ☒ Pesticides ☐ Herbicides ☐ Cyanide ☒  
VOCS ☒ Dioxins/Furans ☐ Nitrate/Nitrite and Phosphate ☒  
SVOCs ☒ TRPH ☒ Anions ☒ Explosives ☐



# **GROUNDWATER/SURFACE WATER SAMPLING LOG** **James M. Montgomery, Consulting Engineers, Inc.**

Serial 14

B-1

Sample Location B-1 Surface Water/Groundwater GW Log Number \_\_\_\_\_  
 (Use Well casing log number)  
 Sampling Personnel DK Date 2-4-93 Weather Clear 30°F. Windy

## **MEASUREMENT SUMMARY:**

Calculated Purge Volume 495 gallons Total Depth 303' Borehole Diameter 5" casing  
 Depth to water 225.4' Time 0945 Measuring point TOL  
 Final pH 7.03 Final SC 1230 Final Temp (°C) 6.7°

## **SAMPLING SUMMARY:**

Casing evacuated with: Dedicated Pump \_\_\_\_\_ Portable Submersible Pump \_\_\_\_\_ Bailer ✓  
 Pump Started \_\_\_\_\_ Pump Stopped \_\_\_\_\_ Total gallons \_\_\_\_\_ Individual Sample Container \_\_\_\_\_

Time	pH	SC	Temp	Flow rate (gpm)	Comments
<u>1015</u>	<u>7.18</u>	<u>1200</u>	<u>6.4°</u>	<u>Initial</u>	<u>Water cloudy, not yellow / Brown</u>
<u>1040</u>	<u>7.00</u>	<u>1250</u>	<u>6.4°</u>	<u>55 gals.</u>	<u>Water clearing slightly</u>
<u>1110</u>	<u>7.10</u>	<u>1200</u>	<u>6.5°</u>	<u>110 gals.</u>	<u>"</u>
<u>1155</u>	<u>7.09</u>	<u>1250</u>	<u>6.5°</u>	<u>≈ 200 gals.</u>	<u>Water only slightly clearing.</u>
<u>1240</u>	<u>7.08</u>	<u>1200</u>	<u>6.5°</u>	<u>≈ 300 gals.</u>	<u>"</u>
<u>1330</u>	<u>7.03</u>	<u>1250</u>	<u>6.7°</u>	<u>≈ 400 gals.</u>	<u>"</u>
<u>1410</u>	<u>7.03</u>	<u>1230</u>	<u>6.7°</u>	<u>≈ 500 gals.</u>	<u>"</u>

INSTRUMENTATION: pH Meter: Orion ☐ Cole-Parmer ☒ Calibration Buffer: 4 ☒ 7 ☒ 10 ☐

Specific Conductivity Meter: Mankon ☐ YSI ☒ Standard Solution NH unknown

SAMPLES COLLECTED AND TIME: Filtered Metals ☒ Pesticides \_\_\_\_\_ Herbicides \_\_\_\_\_ Cyanide ☒  
 VOCs ☒ Dissolved Metals \_\_\_\_\_ Nitrate/Nitrite and Phosphate ☒  
 SVOCs ☒ TPH ☒ Arsenic ☒ Explosives \_\_\_\_\_

PROJECT NO.

Sum. no. 14

V-136-7C

MEASUREMENT SUMMARY:

Calculated Purge Volume <u>54.17</u>	gallons	Total Depth <u>255.41</u>	Borehole Diameter <u>4.5"</u>
Depth to water <u>240.21</u>		Time <u>11:40</u>	Measuring point <u>74</u>
Final pH <u>4.1</u>		Final SC <u>1756</u>	Final Temp(°C) <u>7.5°</u>

INSTRUMENTATION: pH Meter: Orion ☐ Cole-Parmer ☒ Calibration Buffer: 4 ☐ 7 ☐ 10 ☒  
Specific Conductivity Meter: Markson ☐ YSI ☒ Standard Solution NACl unknown

SAMPLES COLLECTED AND TIME: Filtered Metals ☒ Pesticides ☐ Herbicides ☐ Cyanide ☒  
VOCs ☒ Dioxin/Furans ☐ Nitrate/Nitrite and Phosphate ☒  
SVOCs ☒ TRPH ☒ Anions ☒ Explosives ☐

**James M. Montgomery, Consulting Engineers, Inc.**

**SWMU Number** 45

Sample Location SW 45 002 Surface Water/Groundwater SW

**Log Number** \_\_\_\_\_  
(Use: Well name/Log number)

Sampling Personnel: 3K4/F7M

Date 7/2/92

Weather Sunny clear  
NO WIND

### MEASUREMENT SUMMARY:

Calculated Purge Volume \_\_\_\_\_ gallons      Total Depth \_\_\_\_\_      Borehole Diameter \_\_\_\_\_

Depth to water \_\_\_\_\_ Time 1050 Measuring point \_\_\_\_\_

Final pH \_\_\_\_\_ Final SC \_\_\_\_\_ Final Temp(°C) \_\_\_\_\_

### SAMPLING SUMMARY:

**Casing evacuated with: Dedicated Pump \_\_\_\_\_ Portable Submersible Pump \_\_\_\_\_ Bailer \_\_\_\_\_**

**Pump Started\_\_\_\_\_ Pump Stopped\_\_\_\_\_ Total gallons\_\_\_\_\_ Individual Sample Container\_\_\_\_\_**

Time	pH	SC	Temp	<del>Flow rate (gpm)</del>	Comments
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10:50	7.89	1050	21.6	0 ppm
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**INSTRUMENTATION:** pH Meter: Orion ☒ Cole-Parmer ☐ Calibration Buffers: 4 ☐ 7 ☒ 10 ☒

Specific Conductivity Meter: Markson ☐ YSI ☒ Standard Solution 1000 umhos/cm  
DD = YSI / 5.739 g/L

**SAMPLES COLLECTED AND TIME:** Filtered Metals X Pesticides      Herbicides      Cyanide     

**VOCs** ☒ **Dioxins/Furans** ☐ **Nitrate/Nitrite and Phosphate** ☐

**SVOCs** X **TRPH**            **Anions**            **Explosives** X

12:50

**GROUNDWATER/SURFACE WATER SAMPLING LOG**  
**James M. Montgomery, Consulting Engineers, Inc.**

**SWMU Number** 45

Sample Location SW-45-021 Surface Water/Groundwater SW

Log Number \_\_\_\_\_  
(Use: Well name/Log number)

Sampling Personnel BKH / EPM

Date 7/9/92

Weather sunny / clear / hot  
NO wind

**MEASUREMENT SUMMARY:** *Cond*

Calculated Purge Volume 24 gallons      Total Depth                 Borehole Diameter           

Depth to water surface Time 10:45 Measuring point Ebs. of culvert

Final pH \_\_\_\_\_ Final SC \_\_\_\_\_ Final Temp (°C) \_\_\_\_\_

### SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump glass manway device to collect Portable Submersible Pump Bailer

**Pump Started**\_\_\_\_\_ **Pump Stopped**\_\_\_\_\_ **Total gallons**\_\_\_\_\_ **Individual Sample Container**\_\_\_\_\_

Time	pH	SC	Temp	<del>Flow rate (gpm)</del> <i>FFR</i>	Comments
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10:45 2.93 ~~10.10~~ <sup>11.00</sup> 22.0 Oppm

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Country	Year	Population (millions)	Urban population (millions)	Urban population (%)	Population density (per sq km)
Algeria	1980	10.5	4.5	42.9	10.5
Algeria	1985	11.5	5.5	47.8	11.5
Algeria	1990	12.5	6.5	51.6	12.5
Algeria	1995	13.5	7.5	55.5	13.5
Algeria	2000	14.5	8.5	58.6	14.5
Algeria	2005	15.5	9.5	61.3	15.5
Algeria	2010	16.5	10.5	63.6	16.5
Algeria	2015	17.5	11.5	65.7	17.5
Algeria	2020	18.5	12.5	67.6	18.5
Algeria	2025	19.5	13.5	69.2	19.5
Algeria	2030	20.5	14.5	70.7	20.5
Algeria	2035	21.5	15.5	72.1	21.5
Algeria	2040	22.5	16.5	73.3	22.5
Algeria	2045	23.5	17.5	74.5	23.5
Algeria	2050	24.5	18.5	75.5	24.5
Algeria	2055	25.5	19.5	76.5	25.5
Algeria	2060	26.5	20.5	77.4	26.5
Algeria	2065	27.5	21.5	78.2	27.5
Algeria	2070	28.5	22.5	78.9	28.5
Algeria	2075	29.5	23.5	79.7	29.5
Algeria	2080	30.5	24.5	80.3	30.5
Algeria	2085	31.5	25.5	81.0	31.5
Algeria	2090	32.5	26.5	81.6	32.5
Algeria	2095	33.5	27.5	82.1	33.5
Algeria	2100	34.5	28.5	82.6	34.5
Algeria	2105	35.5	29.5	83.1	35.5
Algeria	2110	36.5	30.5	83.6	36.5
Algeria	2115	37.5	31.5	84.0	37.5
Algeria	2120	38.5	32.5	84.4	38.5
Algeria	2125	39.5	33.5	84.8	39.5
Algeria	2130	40.5	34.5	85.2	40.5
Algeria	2135	41.5	35.5	85.5	41.5
Algeria	2140	42.5	36.5	85.9	42.5
Algeria	2145	43.5	37.5	86.2	43.5
Algeria	2150	44.5	38.5	86.5	44.5
Algeria	2155	45.5	39.5	86.8	45.5
Algeria	2160	46.5	40.5	87.1	46.5
Algeria	2165	47.5	41.5	87.4	47.5
Algeria	2170	48.5	42.5	87.7	48.5
Algeria	2175	49.5	43.5	87.9	49.5
Algeria	2180	50.5	44.5	88.1	50.5
Algeria	2185	51.5	45.5	88.3	51.5
Algeria	2190	52.5	46.5	88.4	52.5
Algeria	2195	53.5	47.5	88.6	53.5
Algeria	2200	54.5	48.5	88.8	54.5
Algeria	2205	55.5	49.5	89.0	55.5
Algeria	2210	56.5	50.5	89.2	56.5
Algeria	2215	57.5	51.5	89.4	57.5
Algeria	2220	58.5	52.5	89.6	58.5
Algeria	2225	59.5	53.5	89.8	59.5
Algeria	2230	60.5	54.5	90.0	60.5
Algeria	2235	61.5	55.5	90.2	61.5
Algeria	2240	62.5	56.5	90.4	62.5
Algeria	2245	63.5	57.5	90.6	63.5
Algeria	2250	64.5	58.5	90.8	64.5
Algeria	2255	65.5	59.5	91.0	65.5
Algeria	2260	66.5	60.5	91.2	66.5
Algeria	2265	67.5	61.5	91.4	67.5
Algeria	2270	68.5	62.5	91.6	68.5
Algeria	2275	69.5	63.5	91.8	69.5
Algeria	2280	70.5	64.5	92.0	70.5

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Country	Year	Population (millions)	Urban population (millions)	Urban population (%)	Population density (per sq km)	Urban population density (per sq km)
Algeria	1980	10.5	4.5	42.9	105	105
Algeria	1985	11.5	5.5	47.8	115	115
Algeria	1990	12.5	6.5	51.6	125	125
Algeria	1995	13.5	7.5	55.5	135	135
Algeria	2000	14.5	8.5	58.6	145	145
Algeria	2005	15.5	9.5	61.3	155	155
Algeria	2010	16.5	10.5	63.6	165	165
Algeria	2015	17.5	11.5	65.7	175	175
Algeria	2020	18.5	12.5	67.6	185	185
Algeria	2025	19.5	13.5	69.2	195	195
Algeria	2030	20.5	14.5	70.7	205	205
Algeria	2035	21.5	15.5	72.1	215	215
Algeria	2040	22.5	16.5	73.3	225	225
Algeria	2045	23.5	17.5	74.5	235	235
Algeria	2050	24.5	18.5	75.5	245	245
Algeria	2055	25.5	19.5	76.5	255	255
Algeria	2060	26.5	20.5	77.4	265	265
Algeria	2065	27.5	21.5	78.2	275	275
Algeria	2070	28.5	22.5	78.9	285	285
Algeria	2075	29.5	23.5	79.7	295	295
Algeria	2080	30.5	24.5	80.3	305	305
Algeria	2085	31.5	25.5	81.0	315	315
Algeria	2090	32.5	26.5	81.6	325	325
Algeria	2095	33.5	27.5	82.1	335	335
Algeria	2100	34.5	28.5	82.6	345	345
Algeria	2105	35.5	29.5	83.1	355	355
Algeria	2110	36.5	30.5	83.6	365	365
Algeria	2115	37.5	31.5	84.0	375	375
Algeria	2120	38.5	32.5	84.4	385	385
Algeria	2125	39.5	33.5	84.8	395	395
Algeria	2130	40.5	34.5	85.2	405	405
Algeria	2135	41.5	35.5	85.5	415	415
Algeria	2140	42.5	36.5	85.9	425	425
Algeria	2145	43.5	37.5	86.2	435	435
Algeria	2150	44.5	38.5	86.5	445	445
Algeria	2155	45.5	39.5	86.8	455	455
Algeria	2160	46.5	40.5	87.1	465	465
Algeria	2165	47.5	41.5	87.4	475	475
Algeria	2170	48.5	42.5	87.7	485	485
Algeria	2175	49.5	43.5	88.0	495	495
Algeria	2180	50.5	44.5	88.3	505	505
Algeria	2185	51.5	45.5	88.5	515	515
Algeria	2190	52.5	46.5	88.8	525	525
Algeria	2195	53.5	47.5	89.1	535	535
Algeria	2200	54.5	48.5	89.2	545	545
Algeria	2205	55.5	49.5	89.3	555	555
Algeria	2210	56.5	50.5	89.4	565	565
Algeria	2215	57.5	51.5	89.6	575	575
Algeria	2220	58.5	52.5	89.7	585	585
Algeria	2225	59.5	53.5	89.9	595	595
Algeria	2230	60.5	54.5	90.1	605	605
Algeria	2235	61.5	55.5	90.3	615	615
Algeria	2240	62.5	56.5	90.4	625	625
Algeria	2245	63.5	57.5	90.5	635	635
Algeria						

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**INSTRUMENTATION:** pH Meter: Orion ☒ Cole-Parmer ☐ Calibration Buffers: 4 ☐ 7 ☒ 10 ☒

Specific Conductivity Meter: Manton ☐ YSI ☒ Standard Solution 1.000 umhos/cm  
DO meter = YSI w/ 5739 probe

SAMPLES COLLECTED AND TIME: Filtered Metals ☒ Pesticides ☐ Herbicides ☐ Cyanide ☐

**VOCs** X **Dioxins/Furans** 1 **Nitros/Nitrate and Phosphate**

**SVOCs** ☒ **TRPH** ☐ **Anions** ☐ **Explosives** ☒

June 2, 1945

**GROUNDWATER/SURFACE WATER SAMPLING LOG**  
**James H. Montgomery, Consulting Engineers, Inc.**

**SWNU Number** 45

Sample Location SW 45 003 Surface Water/Groundwater SW

Log Number \_\_\_\_\_  
(Use: Well name, Log number)

Sampling Personnel BEH / FPM

Date 7/9/92

Weather clear / HOT / or sun

### MEASUREMENT SUMMARY:

Calculated Purge Volume \_\_\_\_\_ gallons    Total Depth \_\_\_\_\_    Borehole Diameter \_\_\_\_\_

Depth to water \_\_\_\_\_ Time 10.55 Measuring point \_\_\_\_\_

Final pH \_\_\_\_\_ Final SC \_\_\_\_\_ Final Temp (°C) \_\_\_\_\_

### SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump \_\_\_\_\_ Portable Submersible Pump \_\_\_\_\_ Bailer \_\_\_\_\_

Pump Started \_\_\_\_\_ Pump Stopped \_\_\_\_\_ Total gallons \_\_\_\_\_ Individual Sample Container \_\_\_\_\_

Time	pH	SC	Temp	Flow-rate (gpm)	Comments
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10:55 733 400 243 000

10.35 1.11 1100 29.3 1.11 1.11

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**INSTRUMENTATION:** pH Meter: Orion ☒ Cole-Parmer ☐ Calibration Buffers: 4 ☐ 7 ☒ 10 ☒

Specific Conductivity Meter: Markson ☐ YSI ☒ Standard Solution 100 umho/cm  
DO meter = YSI #1578

SAMPLES COLLECTED AND TIME: Filtered Metals 1 Pesticides          Herbicides          Cyanide         

VOCs ✓ Dioxin/Furans \_\_\_\_\_ Nitrate/Nitrite and Phosphate \_\_\_\_\_

SVOCs X TRPH \_\_\_\_\_ Arsenic \_\_\_\_\_ Explosives X

17:10

**GROUNDWATER/SURFACE WATER SAMPLING LOG**  
**James M. Montgomery, Consulting Engineers, Inc.**

**SWMU Number** 47

Sample Location SW-45-001 Surface Water/Groundwater SW Log Number \_\_\_\_\_  
(Use: Well name, Log number)  
Sampling Personnel RKD / PM Date 7/16/92 Weather clear sunny calm

**MEASUREMENT SUMMARY:**

Calculated Purge Volume \_\_\_\_\_ gallons      Total Depth \_\_\_\_\_      Borehole Diameter \_\_\_\_\_  
 Depth to water \_\_\_\_\_      Time \_\_\_\_\_      Measuring point \_\_\_\_\_  
 Final pH \_\_\_\_\_      Final SC \_\_\_\_\_      Final Temp (°C) \_\_\_\_\_

### SAMPLING SUMMARY:

**Casing evacuated with: Dedicated Pump \_\_\_\_\_ Portable Submersible Pump \_\_\_\_\_ Bailer \_\_\_\_\_**

**Pump Started**\_\_\_\_\_ **Pump Stopped**\_\_\_\_\_ **Total gallons**\_\_\_\_\_ **Individual Sample Container**\_\_\_\_\_

[illegible]

**INSTRUMENTATION:** pH Meter: Orion ☒ Cole-Parmer ☐ Calibration Buffers: 4 ☐ 7 ☒ 10 ☒

Specific Conductivity Meter: Markson ☐ YSI ☒ Standard Solution 4000 umhos/cm  
DO YSI 500

SAMPLES COLLECTED AND TIME: Filtered Metals ☒ Pesticides ☐ Herbicides ☐ Cyanide ☒

**VOCs** ☒ **Dioxins/Furans** ☐ **Nitrate/Nitrite and Phosphate** ☐

**SVOCS      2      TRPH      8      Anions      Explosives**

Sum 4/17

SW-47-002

**MEASUREMENT SUMMARY:**  
 Calculated Purge Volume \_\_\_\_\_ gallons      Total Depth \_\_\_\_\_      Borehole Diameter \_\_\_\_\_  
 Depth to water \_\_\_\_\_      Time 14.30      Measuring point \_\_\_\_\_  
 Final pH —      Final SC 700 ~~us/b~~      Final Temp (°C) —

INSTRUMENTATION: pH Meter: Orlon ☐ Cole-Parmer ☒ Calibration Buffers: 4 ☒ 7 ☒ 10 ☐  
Specific Conductivity Meter: Markon ☐ YSI ☒ Standard Solution 1M unknown

SAMPLES COLLECTED AND TIME: Filtered Metals ☒ Pesticides ☐ Herbicides ☐ Cyanide ☒  
VOCs ☒ Dioxin/Furans ☐ Nitrate/Nitrite and Phosphate ☐  
SVOCs ☒ TPH ☒ Arsenic ☐ Explosives ☐

**Table D-1**  
**TRAD-N GROUNDWATER ELEVATION DATA**

WELL No.	DEPTH TO WATER June 1988	DEPTH TO WATER January 1988	MEASURED POINT ELEV.	ELEV. SOURCE	WATER TABLE ELEV. June 1988	WATER TABLE ELEV. January 1988	ELEV. CHANGE (FT)
15-387	138.8	140.45	4437	e	4398	4397	-1
B-1	304.95	305.9	4692.38	a	4475.41	4474.38	-1.05
B-2	342.47	343.38	4615.06	a	4472.18	4472.57	-0.81
B-4	174.86	175.86	4645.88	a	4471.22	4470.22	-1.00
B-6	228.5	(309.01)	4597.93	a	4361.13	(4318.92)	-42.21*
B-7	239.62	232.21	4607.74	a	4378.12	4375.43	-2.69
B-9	278.86	279.53	4654.97	a	4378.11	4375.44	-2.67
B-10	Not Measured	216.43	4631.7	a		4485.27	
B-11	Not Measured	214.85	4689.53	a		4374.88	
B-12	260.15	262.33	4689.5	a	4319.35	4317.17	-2.18
B-23	Not Measured	185.70	4632.44	a		4467.74	
B-34	303.53	303.36	4681.86	a	4378.22	4375.69	-2.73
P-2a	274.42	Not Measured	4780.67	a	4476.25		
B-25	Not Measured	298.45	4608.67	a		4322.12	
B-30	219.82	221.75	4635.91	a	4316.09	4314.16	-1.93
B-32	189.88	191.16	4602.67	a	4312.99	4311.51	-1.48
B-36	Not Measured	188.78	4634.12	a		4467.34	
B-40	182.8	184.14	4451.85	a	4309.05	4307.71	-1.34
B-41	186.15	187.86	4478.45	a	4312.3	4310.79	-1.51
B-44	131.54	132.22	4435.16	a	4308.62	4302.84	-0.78
B-45	121.98	122.57	4435.14	a	4312.16	4311.57	-1.89
B-47	112.23	112.92	4414.67	a	4302.44	4301.75	-0.69
B-48	101.78	103.45	4414.22	a	4312.54	4310.87	-1.67
B-53	182.25	184.75	4496	a	4312.85	4311.35	-1.40
B-54	214.88	215.51	4788.62	a	4474.04	4472.11	-0.93
N-35	240.25	241.97	4715.73	d	4478.49	4474.78	-1.72
N-110-88	308.22	310.19	4786.11	c	4477.79	4475.98	-1.86
N-111-88	294.49	295.04	4806.21	c	4480.82	4479.27	-1.55
N-112-88	222.05	222.25	4801.29	c	4479.23	4478.03	-1.20
N-114-88	318.9	320.00	4797.82	c	4478.92	4477.82	-1.10
N-116-88	277.08	Not Measured	4788.22	c	4479.2		
N-118-88	234.4	235.81	4712.61	c	4479.21	4477.80	-1.41
N-127-88	228.23	229.94	4705.24	c	4477.01	4475.40	-1.61
N-128-88	227.95	Not Measured	4704.98	c	4478.98		
N-130-88	220.22	221.84	4707.08	c	4478.81	4475.19	-1.62
N-131-88	218.2	219.47	4692.79	b	4474.59	4472.22	-1.37
N-132-88	217.38	218.67	4692.5	b	4475.12	4472.83	-1.29
N-133-88	242.82	244.41	4715.62	b	4472.81	4472.22	-1.59
N-134-88	186.23	187.40	4687.97	b	4471.84	4470.57	-1.07
N-135-88	220.4	221.89	4707.17	b	4475.77	4475.48	-1.29
N-136-88	228.71	240.10	4714.78	b	4478.07	4474.88	-1.29
N-137-88	215.45	215.75	4672.19	b	4387.74	4387.44	-0.30
N-138-88	228.45	228.78	4692.85	b	4397.4	4397.09	-0.31
N-139-88	224.85	225.17	4675.24	b	4390.49	4390.17	-0.32
P-13	Not Measured	278.78	4693.74	a		4319.96	
P-15	227.71	224.90	4699.02	a	4311.22	4314.13	+2.91
P-19	198.77	195.97	4694.62	a	4310.86	4309.06	-1.80
P-21	222.88	225.21	4682.2	a	4319.27	4316.99	-2.28
P-28	Not Measured	151.09	4454.26	a		4308.17	
P-29	Not Measured	194.70	4685.48	a		4470.78	
WW-4	>400	611.98	5029	e	4419	4398	
WW-5	212.27	212.0	4780	e	4441.63	4441.0	-0.63
Teele#6	Not Measured	488.80	4960	e		4622.5	
Teele#7	Not Measured	448.50	4960	e		4491.1	
Teele#8	492.6	475.09	4977	f	4489.4	4982	+492.6

- a JRM, 1988  
b Jordan, 1990  
c Weston, 1990  
d RA, 1988  
e Estimated from UGCS maps  
f UGCS, 1988  
g Info. from J.D. England, Teele City Engineer  
\* Probable measurement error



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## Appendix E

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MONTGOMERY WATSON

## **APPENDIX E**

### **GEOPHYSICAL SURVEY RESULTS**

#### **E.1 INTRODUCTION**

**E.1.0.1.** Presented in this appendix is the final report prepared by Practical Geophysics, Inc., of Salt Lake City, Utah, pertaining to the geophysical investigation at the OB/OD Area of TEAD N. This investigation was conducted at the Burn Pad (SWMU 1b) and the Trash Burn Pits (SWMU 1c) with the objective of defining the location and presence of debris in buried trenches and pits, historically used for the open burning and/or burial of material, utilizing geophysical means. This allowed accurate siting of test pits to investigate these subsurface features.

**E.1.0.2.** The report presented herein consists of an introduction, a description of the methodology and equipment, and conclusions and recommendations regarding the effectiveness of this survey. Appended to the report are copies of the composite aerial photographs used for location, survey data, and field notes kept by the geophysical field personnel.

**E.1.0.3.** Practical Geophysics, Inc. fielded two personnel for the geophysical field investigation.

#### **E.2 SCOPE OF GEOPHYSICAL INVESTIGATION**

**E.2.0.1.** The scope of the geophysical investigation at the OB/OD Area during the RFI field effort there consisted of the following activities:

- Compiling a composite map of historic excavation images at the Burn Pad and the Trash Burn Pits from six generations of aerial photographs, ranging from 1952 to 1967
- Using a total station surveying instrument to turn angles and set distances from set reference points to establish the locations of the image centers from the composite map

- Utilizing a GEM Systems model GSM-8 field magnetometer to confirm the locations of the burial features containing iron and steel debris
- Using a Geonics Ltd. Model EM-31 soil conductivity measuring system to locate contrasts in soil conductivity between undisturbed native soil and the disturbed soil associated with the burial features noted on the aerial photographs
- Staking the soil conductivity and magnetic anomalies, allowing the later siting of the excavation test pits.

### **E.3 SUMMARY OF RESULTS**

**E.3.0.1.** The results of the geophysical activities at the OB/OD Area are summarized as follows:

- A total of 41 historic excavation features at the Burn Pad (SWMU 1b) and the Trash Burn Pits (SWMU 1c) were identified on the composite photo images. These features were sited on the ground using standard surveying methods.
- An additional eight sites were identified on the ground during investigation activities, making a total of 49 potential excavation features.
- Soil conductivity and ground magnetic traverses effectively confirmed the presence of most of the previously-located sites, and allowed for improved accuracy in defining locations for the subsequent excavation test pit investigation.

**AERIAL PHOTOGRAPHIC DELINEATION AND GEOPHYSICAL CONFIRMATION  
OF PITS AND TRENCHES IN THE OPEN BURNING/OPEN DETONATION AREA  
(Solid Waste Management Unit Number 1)  
TOOELE ARMY DEPOT, NORTH AREA, UTAH**

**JMM Job No.: 2942.0110  
Contract No.: DAAA15-90-0011  
Task Order 4**

**October, 1992**

**Prepared for  
J M Montgomery, Consulting Engineers, Inc.**

**Prepared by  
Practical Geophysics, Inc.**

**PRACTICAL GEOPHYSICS, INC.**

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**1034 WINDER LANE  
SALT LAKE CITY, UTAH 84124  
TELEPHONE: (801) 277-1044**

## TABLE OF CONTENTS

	Page
LIST OF ILLUSTRATIONS . . . . .	ii
INTRODUCTION. . . . .	1
COMPOSITE EXCAVATION IMAGE MAP. . . . .	2
GEOPHYSICAL FOLLOW-UP METHODOLOGY AND PROCEDURES. . . . .	4
CONCLUSIONS AND RECOMMENDATIONS . . . . .	8
APPENDICES	
Appendix A. Bearings and Distances to Excavation Image Centers . . . . .	9
Appendix B. Geophysical Field Notes . . . . .	10

## **LIST OF ILLUSTRATIONS**

- Figure 1. OB/OD Area - 1952.**
- Figure 2. OB/OD Area - 1959.**
- Figure 3. OB/OD Area - 1966.**
- Figure 4. OB/OD Area - 1978.**
- Figure 5. OB/OD Area - 1985.**
- Figure 6. OB/OD Area - 1987.**
- Figure 7. Excavation Images 1952 to 1987 Composite Map.**
- Figure 8. Excavation Image Location Technique.**
- Figure 9. Schematic Excavation Image Typical Geophysical Confirmation Response.**

## **INTRODUCTION**

Sampling of waste burial pits and trenches at the Open Burning/Open Detonation (OB/OD) area, Solid Waste Management Unit (SWMU) Number One within the Tooele Army depot, North Area (NTEAD) was supported by review of historical air photos to identify probable excavation sites, which were then field checked using geophysical methods to confirm their presence.

Aerial photographs of the presently inactive OB/OD area, taken over the period of years from 1952 to 1987, show evidence of at least 41 excavations, which have since been substantially obliterated by releveling of the surface and by vegetation.

This report documents the procedures used to develop a composite map of the excavation images from a compilation of six generations of air photos of the OB/OD area, the procedures used to locate the center of each image in the field, and describes the geophysical methodology and procedures used to test for anomalous geophysical characteristics associated with the probable excavations to help confirm their locations.

## **COMPOSITE EXCAVATION IMAGE MAP**

The purpose for compiling the composite overlay of the historic excavation images in the OB/OD area was to insure that substantially all pits and trenches were accounted for and to minimize the geophysical field effort required to confirm their locations.

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1684 WINDER LANE  
SALT LAKE CITY, UTAH 84124  
TELEPHONE: (801) 277-1844

Six generations of air photos, each consisting of stereographic photo pairs, for the years 1952, 1959, 1966, 1978, 1985 and 1987, were used to construct a composite map of all identifiable excavation images in the OB/OD area (Figures 1 through 6). These photos were obtained from the U.S. Department of Agriculture, Agriculture Stabilization and Conservation Service, Salt Lake City, Utah. Identifiable field points (road intersections, fence corners, etc.) common to all six generations of photos were located on site. Horizontal distances between these points and their respective elevations were used to photogrammetrically rectify each generation's stereophoto pair to an accurate orthophoto at a scale of 1 to 6000 (1 inch equals 500 feet).

The composite map of the identifiable excavation images from each of the six generations of identically scaled orthophotos was then constructed, Figure 7. A reference point and a reference line were established on the composite map, which could be located and established in the field. A primary reference point was located in the southeastern corner of the OB/OD area at the intersection of a north-trending road with the E-W inner-boundary road, Figure 8. The reference line was established as a line from this point through the section corner (brass cap) common to Sections 1 and 12, T.4S, R.6W., and Sections 6 and 7, T.4S., R.5W., Salt Lake Base and Meridian, located six feet south of the E-W boundary fence. A horizontal angle measured clockwise from

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1634 WINDER LANE  
SALT LAKE CITY, UTAH 84124  
TELEPHONE: (801) 277-1844



this reference line to a line drawn from the reference point through the center of each excavation image established bearings to their respective centers. The distances from the reference point to their respective image centers were scaled directly from the composite map. An alternate reference point, located on the center line of the culvert at the mid point of the road crossing Box Elder Wash was established to maintain line-of-sight between the survey instrument and the northernmost excavation images.

Appendix A contains a list of the bearings and horizontal distances to the 41 identifiable excavations from their respective reference lines and reference points. A total station surveying instrument was set up at the reference points and a zero horizontal angle was established by sighting along the reference line to the section corner brass cap. Horizontal angles from this reference line were turned clockwise and the horizontal distances to each image center were surveyed to determine their respective locations in the OB/OD area.

Given the 1 inch equals 500 feet scale of the orthophotos, scaled distances from the reference points to the excavation image centers were measured to an accuracy of  $\pm 5$  feet. This accuracy was considered sufficient to insure that the image centers would be located within their respective outlined areas.

Field evidence from the geophysical follow-up work indicates that 39 of the 41 bearings and distances used to locate the excavation site centers fell within their actual outlines.

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1834 WINDER LANE  
SALT LAKE CITY, UTAH 84124  
TELEPHONE: (801) 277-1844

Geophysical anomalies associated with images 59-5 and 59-6 were found 15 to 20 feet further north than their surveyed center locations. Since the minimum dimension of most all image outlines and since geophysical cross profiles were surveyed a radial distance of at least 50 feet from the image centers, errors in computed locations of 15 to 20 feet were acceptable.

In addition to locating the 41 excavation sites identifiable on the air photos, eight sites, obscured by adjacent excavations, were also discovered. Excavated material from the series of N-S trenches appearing on the 1978 orthophoto, images 21 through 29 on Figure 7, was apparently placed over adjacent trenches. The 1978 photo shows trenches spaced approximately 100 feet apart. Geophysical field evidence indicates that trenches are actually located 30 to 50 feet apart across this zone. Rather than the nine apparent trenches at a 100 foot spacing, field evidence indicates 17 trenches in the area between images 21 and 29.

#### **GEOPHYSICAL FOLLOW-UP METHODOLOGY AND FIELD PROCEDURES**

The selection of geophysical follow-up methods was based upon consideration of the probable physical property contrasts between undisturbed soil and the back filled contents of the pits and trenches as well as the change in local soil resistivity at the perimeter of the pits and trenches caused by baking of the soil during burning of the waste material.

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1834 WINDER LANE  
SALT LAKE CITY, UTAH 84124  
TELEPHONE: (801) 277-1844

The Geonics Ltd. soil conductivity measuring system, Model EM-31, was used to locate contrasts in soil conductivity between the undisturbed native soil and: 1) the generally disturbed backfill material in the excavations, 2) baked soil resulting from open burning in the excavations, 3) conductive material disposed in the excavations, e.g., metal banding and other waste metal, and 4) groundwater trapped in the excavations by the impermeable native soil (clay lakebed sediments). An excavation in the impermeable lakebed clays was expected to possibly retain relatively larger amounts of surface water since the backfilled material would be a more permeable mix of disposed material plus disturbed native soil.

The EM-31 consists of a signal transmitting coil and a signal receiving coil held rigidly on a boom with an intercoil spacing of 12 feet resulting in an average exploration depth of about 15 feet. Since the disturbed surface of the OB/OD area has been leveled, the upper one to two feet consists of mixed soil. The EM-31 effectively sees through this electrically homogeneous layer and responds to conductivity contrasts related to the above described conditions associated with the deeper excavations.

Due to the high clay content of the lakebed sediments comprising the upper one to two feet of mixed soil, the ability of ground penetrating radar to see through this layer was considered doubtful. Use of the EM-31 was considered, and

## **PRACTICAL GEOPHYSICS, INC.**

1034 WINDER LANE  
SALT LAKE CITY, UTAH 84124  
TELEPHONE: (801) 277-1044

proved to be, a more effective and less costly alternative method.

The EM-31 is calibrated so that a given signal strength measured at the receiving coil from a constant signal strength transmitted by the transmitting coil is read directly as the bulk conductivity of the volume of soil between the two coils. This volume, consisting of the search depth of approximately 15 feet, the intercoil spacing of 12 feet, and a search width of at least six feet, is about 1100 cubic feet of material. Conductivity readings are taken in an essentially continuous mode, giving a continuous soil conductivity profile. The instrument was moved slowly along the primary traverses across an excavation site until a detectable change, if any, was noted. Since the contents of and purpose for (simple burial, burn or detonation) a given excavation was not known, its possible soil conductivity signature was unpredictable. In fact, a wide range of soil conductivities was measured over the various excavation sites, varying from values lower than the undisturbed soil, to very high conductivities generally coincident with anomalously high magnetic readings to complex anomalies of both low and high conductivities relative to the undisturbed soil value.

Anomalously high conductivities coincident with magnetic highs were thought to be associated with massive concentrations of metal banding and other scrap iron and steel objects. The complex conductivity anomalies have characteristics attributed to

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1834 WINDER LAKE  
SALT LAKE CITY, UTAH 84124  
TELEPHONE: (801) 277-1844

a traverse from undisturbed native soil average conductivity to locally low conductivity associated with baked soil on the pit or trench margin, to high conductivity in the central pit or trench area associated with the buried contents. Figure 9 shows the typical complex soil conductivity profile observed over some of the excavation sites.

The expected presence of iron and steel scrap suggested the use of ground magnetic measurements to help confirm the location of those excavations containing such material. A GEN Systems model GSM-8 proton precession magnetometer was used to measure local variations in the Earth's total magnetic field strength caused by local disposal of iron and steel waste. On-site geologic material is non-magnetic so any local variations in the total magnetic field strength can be directly attributed to the presence of iron and steel waste.

The GSM-8 measures to an accuracy of one gamma change in the local total field strength, about 54,500 gammas. A one pound mass of iron located five feet below the magnetometer sensor generates an approximate eight gamma anomaly in the presence of this total magnetic field. As an example of this instrument's sensitivity to scrap metal, initial investigation of the 52-1 excavation site discovered an isolated approximately five pound piece of iron shrapnel buried one foot below surface in the roadside berm, which generated a forty gamma anomaly.

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SALT LAKE CITY, UTAH 84124  
TELEPHONE: (801) 577-1844

When a given excavation location was confirmed by anomalous geophysical readings, the most anomalous reading points within the excavation outline were flagged, blue flagging for conductivity anomalies and orange flagging for magnetic anomalies. These maximum observed anomalies were detected by taking grid measurements in addition to the primary traverses within the confirmed excavation outline. By detecting and flagging specific anomaly maxima in this manner, sampling of the contents of a given excavation site at these flagged points help to insure that a meaningful sample would be obtained.

Appendix B contains the actual field notes taken at each of the excavation image sites investigated by geophysical follow-up. In most all cases anomalous geophysical response was noted within a given outlined area. In some cases, a suspected excavation site had no definitive geophysical response. The only direct evidence for such sites was a local surface depression possibly caused by settling of the backfilled material and the presence of burned wood. In all cases, some evidence for the former presence of a pit or trench was found in the immediate vicinity of the excavation image center.

#### **CONCLUSIONS AND RECOMMENDATIONS**

The task of testing the contents of waste disposal pits and trenches within the OB/OD area, which measures roughly 4,000,000 square feet overall, was facilitated by compilation of excavation

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1034 WINDER LANE  
SALT LAKE CITY, UTAH 84124  
TELEPHONE: (801) 277-1044

images evident on six generations of aerial photographs dating from 1952 to 1987. Leveling of the surface in the excavated areas and natural revegetation have essentially obliterated most of the excavated sites. The composite map of 41 such images substantially reduced the task area to about 10 percent of the overall area. This reduction in area allowed for more effective and efficient use of geophysical follow-up methods to help confirm the presence of the obscured excavations.

Soil in the OB/OD area consists primarily of clay-rich lakebed sediments, which preclude the use of ground penetrating radar since its search depth is severely limited by the presence of clay. Soil conductivity and ground magnetic surveys effectively confirmed the presence of most of the 41 sites, whereby either anomalous soil conductivities and/or magnetic readings were found within a given excavation outline.

The effectiveness of the overall approach used in locating excavations in the OB/OD area could be improved by a more thorough search of aerial photo archives. This search may require several weeks to several months to actually locate and obtain all available photos for a given area. The more complete the photo record of excavation activity at a given site, the greater the success in recovery of all excavation sites.

It is assumed that the results obtained by the above described approach for the present task area were both effective and efficient.

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1634 WINDER LANE  
SALT LAKE CITY, UTAH 84124  
TELEPHONE: (801) 277-1844



Figure 1.  
OB/OD AREA - 1952



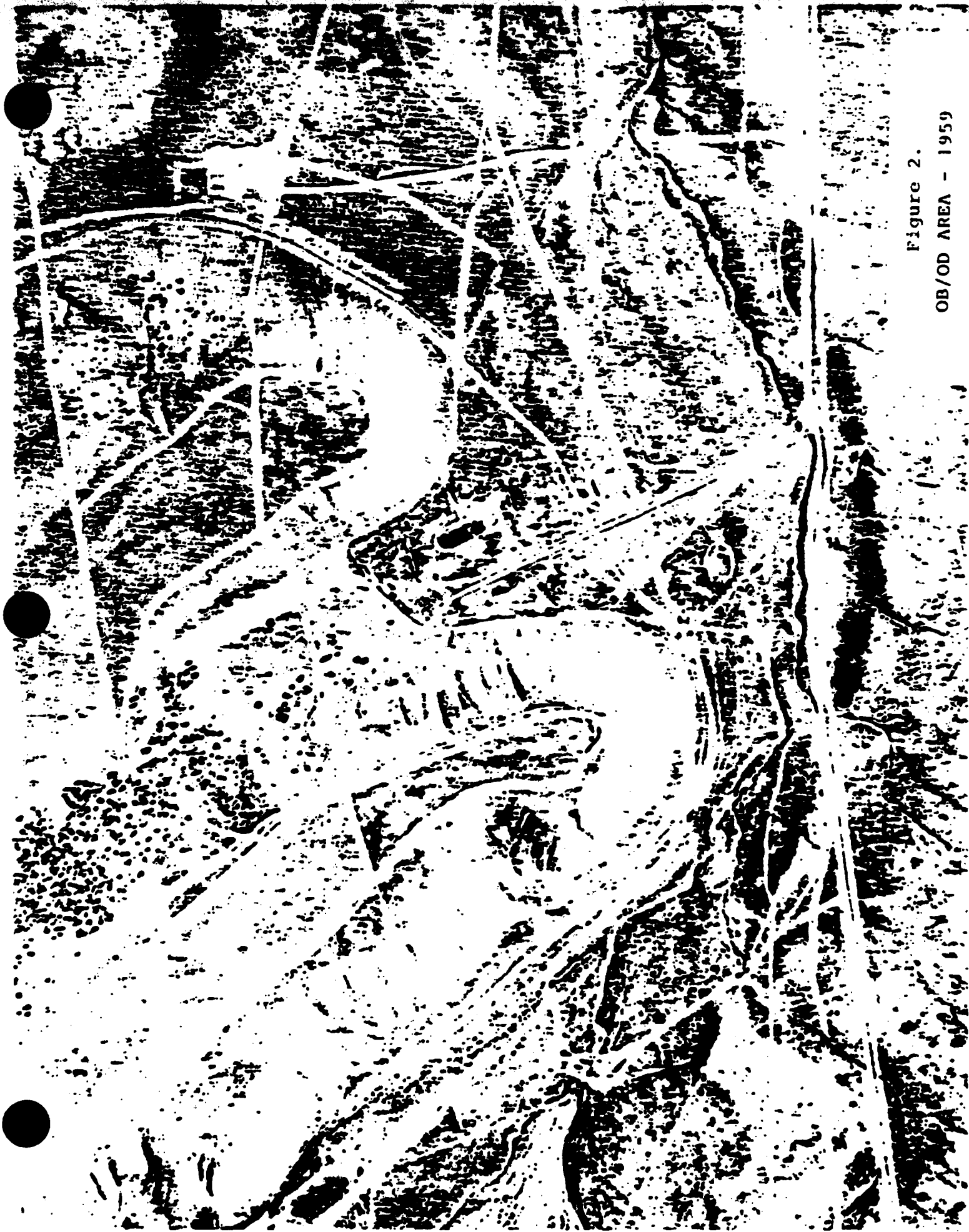


Figure 2.

OB/OD AREA - 1959



Figure 3.  
OB/OD AREA - 1966



Figure 4.  
OB/OD AREA - 1978



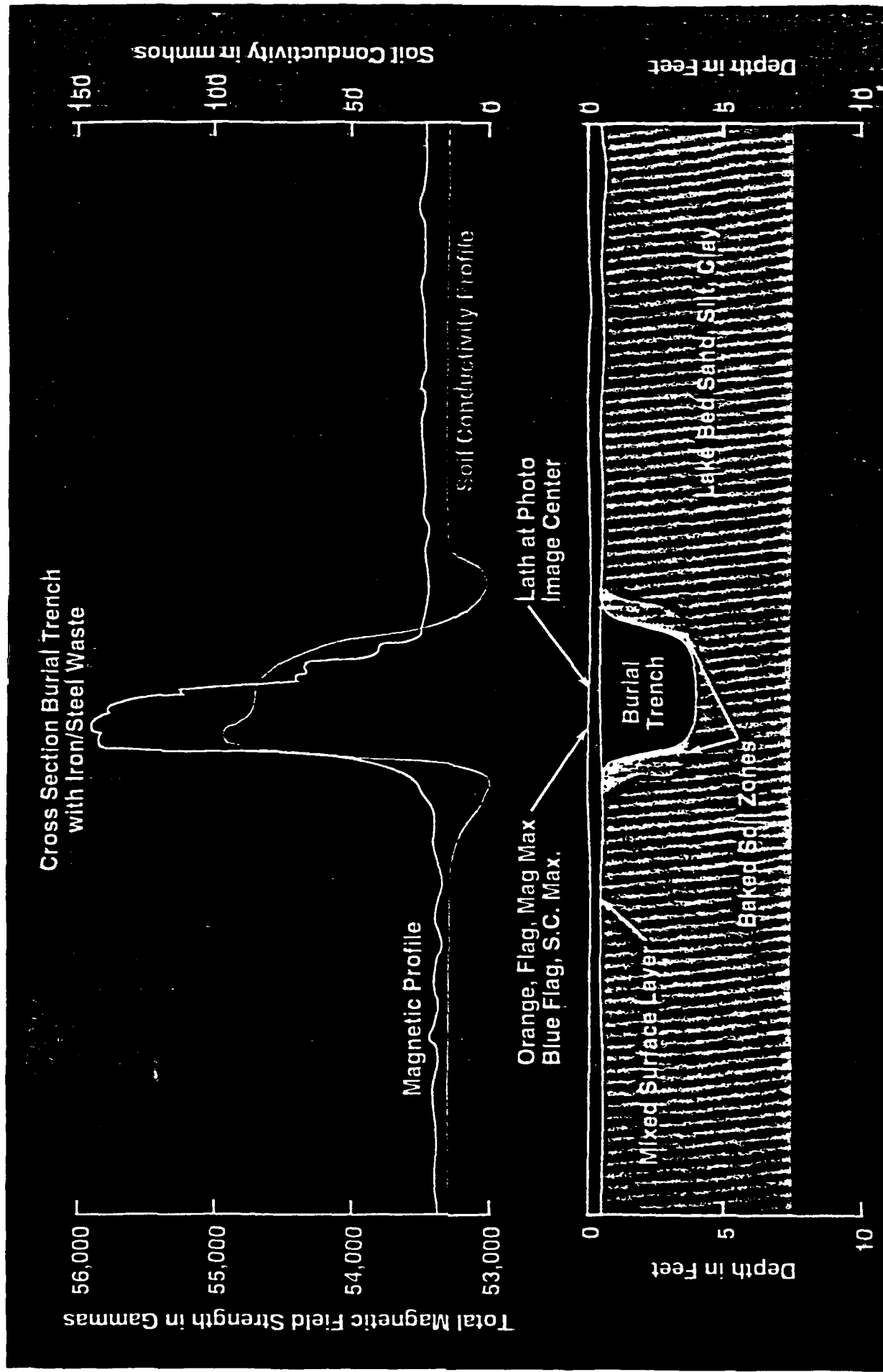
Figure 5.

OB/OD AREA - 1985



Figure 6.  
OB/OD AREA - 1987

Figure 2.



SCHEMATIC EXCAVATION IMAGE TYPICAL GEOPHYSICAL CONFIRMATION RESPONSE

# APPENDIX A

9

## Bearings and Distances to Excavation Image Centers

IMAGE YEAR- NUMBER	BEARING FROM REFERENCE LINE	DISTANCE FROM REFERENCE POINT	REFERENCE POINT
52-1	15° 54' 27"	2070'	Road Intersection
52-2	34° 18' 07"	1998'	" "
59-3	32° 33' 24"	2314'	" "
59-4	36° 54' 59"	2464'	" "
59-5	42° 48' 34"	2590'	" "
59-6	47° 44' 55"	2580'	" "
59-7	42° 42' 07"	2204'	" "
59-8 N end	74° 49' 31"	2808'	Culvert
59-8 S end	77° 23' 11"	2198'	" "
59-9	44° 55' 01"	2436'	Road Intersection
59-10	35° 19' 43"	2231'	" "
59-11	46° 03' 20"	2111'	" "
59-12	31° 59' 16"	1727'	" "
59-13	40° 56' 12"	1946'	" "
59-14	39° 53' 58"	2346'	" "
66-15	74° 49' 31"	2808'	Culvert
66-16	75° 16' 42"	2676'	" "
66-17	75° 44' 35"	2518'	" "
66-18	76° 31' 23"	2360'	" "
66-19	77° 23' 11"	2198'	" "
66-20	43° 11' 01"	2521'	Road Intersection
78-21	34° 01' 00"	2190'	" "
78-22	37° 33' 30"	2157'	" "
78-23	39° 46' 12"	2056'	" "
78-24	42° 17' 00"	2014'	" "
78-25	44° 16' 01"	1934'	" "
78-26	47° 51' 56"	1881'	" "
78-27	50° 00' 00"	1828'	" "
78-28	52° 25' 18"	1779'	" "
78-29	55° 42' 25"	1713'	" "
78-30	59° 25' 42"	1504'	" "
78-31	66° 37' 11"	1449'	" "
78-32	70° 54' 50"	1391'	" "
78-33	74° 38' 18"	1416'	" "
78-34	83° 05' 20"	1496'	" "
78-35	76° 29' 50"	1563'	" "
78-36	75° 09' 51"	1738'	" "
78-37	80° 05' 19"	1888'	" "
78-38	81° 56' 53"	2070'	" "
78-39	83° 42' 47"	1781'	" "
78-40	81° 50' 47"	1727'	" "
78-41	84° 21' 26"	1678'	" "



**APPENDIX B**  
**Geophysical Field Notes**



STA

T.A.D.

Station	Notes	FS to
Sta 1	100.0	Sta 2
Sta 2	100.0	Sta 3
Sta 3	100.0	Sta 4
Sta 4	100.0	Sta 5
Sta 5	100.0	Sta 6
Sta 6	100.0	Sta 7
Sta 7	100.0	Sta 8
Sta 8	100.0	Sta 9
Sta 9	100.0	Sta 10
Sta 10	100.0	Sta 11
Sta 11	100.0	Sta 12
Sta 12	100.0	Sta 13
Sta 13	100.0	Sta 14
Sta 14	100.0	Sta 15
Sta 15	100.0	Sta 16
Sta 16	100.0	Sta 17
Sta 17	100.0	Sta 18
Sta 18	100.0	Sta 19
Sta 19	100.0	Sta 20
Sta 20	100.0	Sta 21
Sta 21	100.0	Sta 22
Sta 22	100.0	Sta 23
Sta 23	100.0	Sta 24
Sta 24	100.0	Sta 25
Sta 25	100.0	Sta 26
Sta 26	100.0	Sta 27
Sta 27	100.0	Sta 28
Sta 28	100.0	Sta 29
Sta 29	100.0	Sta 30
Sta 30	100.0	Sta 31
Sta 31	100.0	Sta 32
Sta 32	100.0	Sta 33
Sta 33	100.0	Sta 34
Sta 34	100.0	Sta 35
Sta 35	100.0	Sta 36
Sta 36	100.0	Sta 37
Sta 37	100.0	Sta 38
Sta 38	100.0	Sta 39
Sta 39	100.0	Sta 40
Sta 40	100.0	Sta 41
Sta 41	100.0	Sta 42
Sta 42	100.0	Sta 43
Sta 43	100.0	Sta 44
Sta 44	100.0	Sta 45
Sta 45	100.0	Sta 46
Sta 46	100.0	Sta 47
Sta 47	100.0	Sta 48
Sta 48	100.0	Sta 49
Sta 49	100.0	Sta 50
Sta 50	100.0	Sta 51
Sta 51	100.0	Sta 52
Sta 52	100.0	Sta 53
Sta 53	100.0	Sta 54
Sta 54	100.0	Sta 55
Sta 55	100.0	Sta 56
Sta 56	100.0	Sta 57
Sta 57	100.0	Sta 58
Sta 58	100.0	Sta 59
Sta 59	100.0	Sta 60
Sta 60	100.0	Sta 61
Sta 61	100.0	Sta 62
Sta 62	100.0	Sta 63
Sta 63	100.0	Sta 64
Sta 64	100.0	Sta 65
Sta 65	100.0	Sta 66
Sta 66	100.0	Sta 67
Sta 67	100.0	Sta 68
Sta 68	100.0	Sta 69
Sta 69	100.0	Sta 70
Sta 70	100.0	Sta 71
Sta 71	100.0	Sta 72
Sta 72	100.0	Sta 73
Sta 73	100.0	Sta 74
Sta 74	100.0	Sta 75
Sta 75	100.0	Sta 76
Sta 76	100.0	Sta 77
Sta 77	100.0	Sta 78
Sta 78	100.0	Sta 79
Sta 79	100.0	Sta 80
Sta 80	100.0	Sta 81
Sta 81	100.0	Sta 82
Sta 82	100.0	Sta 83
Sta 83	100.0	Sta 84
Sta 84	100.0	Sta 85
Sta 85	100.0	Sta 86
Sta 86	100.0	Sta 87
Sta 87	100.0	Sta 88
Sta 88	100.0	Sta 89
Sta 89	100.0	Sta 90
Sta 90	100.0	Sta 91
Sta 91	100.0	Sta 92
Sta 92	100.0	Sta 93
Sta 93	100.0	Sta 94
Sta 94	100.0	Sta 95
Sta 95	100.0	Sta 96
Sta 96	100.0	Sta 97
Sta 97	100.0	Sta 98
Sta 98	100.0	Sta 99
Sta 99	100.0	Sta 100

Blm 521-4015

7-7-92

HD	VD	SD	TH
2117.25	15.335	217481	4.77
2000.675	16.516	2000.711	1.0
7-8-92			
2339.6	29.534	2339.664	2.7
2512.528	33.326	2512.545	1.1
2600.575	31.273	2600.762	1.1
2588.554	35.604	2588.800	1.1
2069.175	15.029	2069.912	9.62
2340.097	24.626	2340.267	1.1



STA	HD	TAD	SD	HP	HI
530 66-17	2196.777	43.624 93.907	2197.217	4.625	5.07
From G-0A					
530 66-18	2350.710	52.359 52.983	2351.298	"	"
From G-0A					
530 66-17	2477.122	60.633 60.417	2479.867	"	"
From G-0A					
530 66-16	2635.908	70.379 70.482	2636.353	"	"
From G-0A					
530 66-15	2811.267	80.436 80.686	2812.025	"	"
From G-0A					
		7-12-92			
530 78-21	2206.896	12.642 12.682	2206.944	4.625	4.99
From G-0					
530 78-22	2152.368	16.302 16.266	2152.470	"	"
From G-0					
530 78-23	2070.717	12.984 12.940	2070.757	"	"
From G-0					
530 78-24	2006.321	10.364 10.321	2006.347	"	"
From G-0					
530 78-25	1992.617	10.358 10.328	1992.643	"	"
From G-0					
530 78-26	1910.376	7.001 6.968	1910.409	"	"
From G-0					
530 78-27	1847.076	5.610 5.577	1847.086	"	"
From G-0					

H I

76° 39' 04"	Shots 66-15 through 66-17 none from hole on Culvert called G-0A
75° 37' 48"	Hub at G-0A 15.66'
74° 56' 55"	M of Fence between roads
74° 10' 00"	
73° 13' 40"	
33° 14' 28"	Shots 78-21 through 78-29 none shot from G-0
37° 31' 50"	
40° 16' 09"	
42° 40' 45"	
45° 39' 47"	
48° 26' 30"	
50° 18' 58"	

STA	TAD		7-12-92	
	HD	VD	SD	PH
78-28	1779.357	3.299	1779.760	4.625
78-29	1715.093	-0.269	1715.092	"
78-30	1505.289	-7.618	1505.279	4.625
78-31	1448.019	-11.322	1448.065	"
78-32	1402.051	-12.900	1402.710	"
78-33	1416.132	-13.668	1416.198	4.9
78-34	1517.612	-17.720	1517.717	"
78-35	1532.165	-18.005	1532.287	"
78-36	1738.242	-18.645	1738.345	"
78-37	1938.191	-20.037	1938.226	"
78-38	2074.277	-16.823	2074.457	"
78-39	1792.716	-15.825	1792.819	"

H Z

52° 31' 45"	
54° 55' 45"	
59° 46' 56"	54.075 30 ft from 51
66° 20' 08"	clear from 6-0
69° 41' 50"	
73° 01' 34"	
81° 41' 00"	
78° 57' 40"	
76° 41' 30"	73.8
81° 25' 42"	16.7
81° 51' 57"	20.76
82° 38' 37"	



52-1

Sq. Area So. of road

2 Weak Mag Anomalies

David Smith

Weak SC Zone 20 mm

Bob

Plan

521-4415

TAD (Site 5) N July 7, 1992

52-1 Area

X = 15° 54' 30" km 60 0.5M B

D = 2117 Total Field

2 Section STAGE  
scale 1 sq = 5 feet

E-W road

Site

52-1 34' 20' 53-800 5-20 10'

from Object find

below Surface

Dug up with shovel

0.547  
No x object hit manually  
Weak sc 7 0.5385

DFD one  
K La

52-1 | testshot 17° 54' 27" D = 2070  
from 6-0

Moved 47' Closed To 6-0  
Very Weak Mag Zone 50g  
Weak 3C ② Zones

See Previous: 52-1

[illegible]

52.811

১৫৩

57-2 4000 circular Area

3	Intense Mag	Zones
---	-------------	-------

2	Strong	SC	Zones 10-50 mm
---	--------	----	----------------

Intense	SC	Zone	100 m
---------	----	------	-------

4485

6 foot staff on stage

52-2

~~34~~ 34° 24' 19" from 6:09 AM to 6:14:53

$$D = 1000$$

$\text{Ag} + \text{H}_2\text{O} \rightarrow \text{AgOH} + \text{H}_2$

Strong SL Zone

150

25 June 52

~~Intense Heat~~

10

5. - -

३८

1

791

755

**100-100000**

**0776**

12.

100

—

1000

—

—





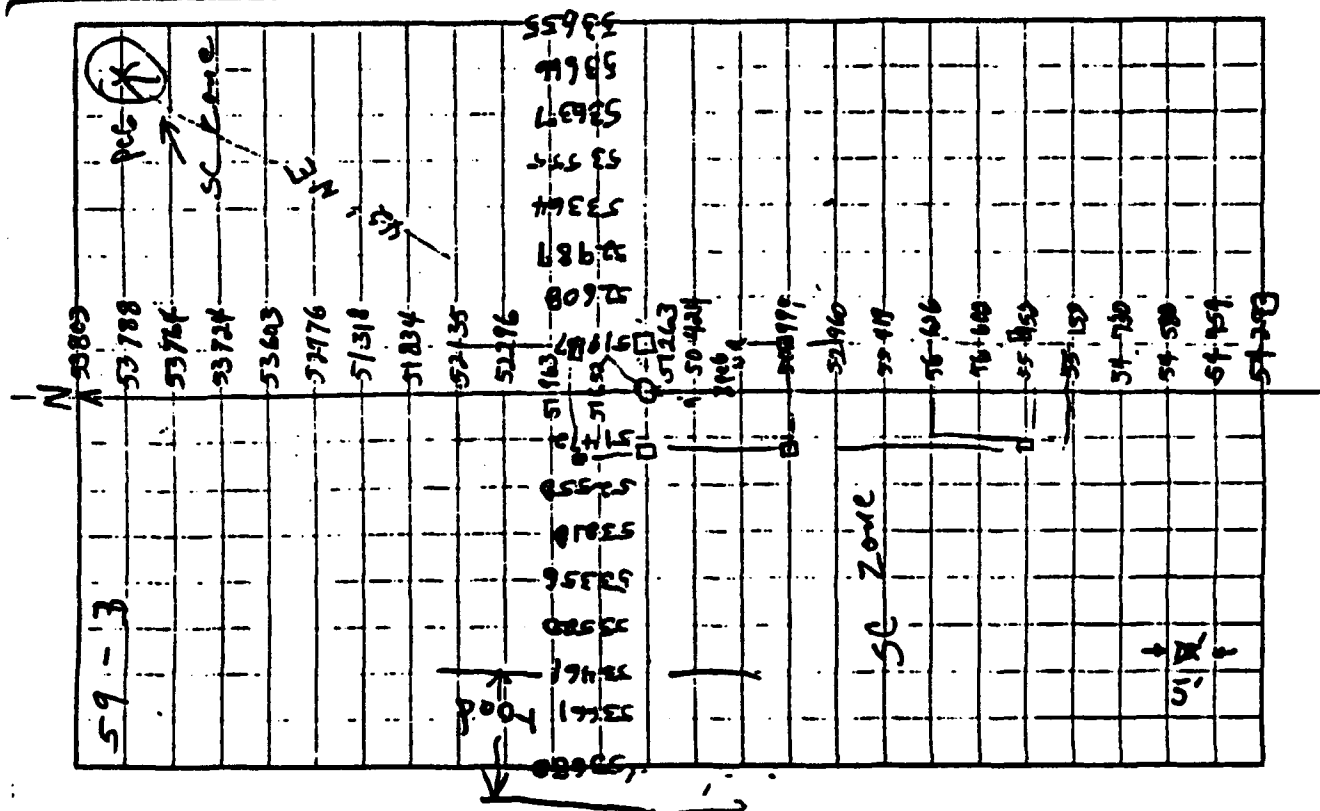
57-3. N-S Trench

2. intere | NaB | formaltes

2. Strong SC Zones

$\rightarrow 32^{\circ} 12' 20''$   $\rightarrow 32^{\circ} 11' 39''$  from  $0.0$

D 2340' 2340'



7-7-92

59-4 11-5 Trench

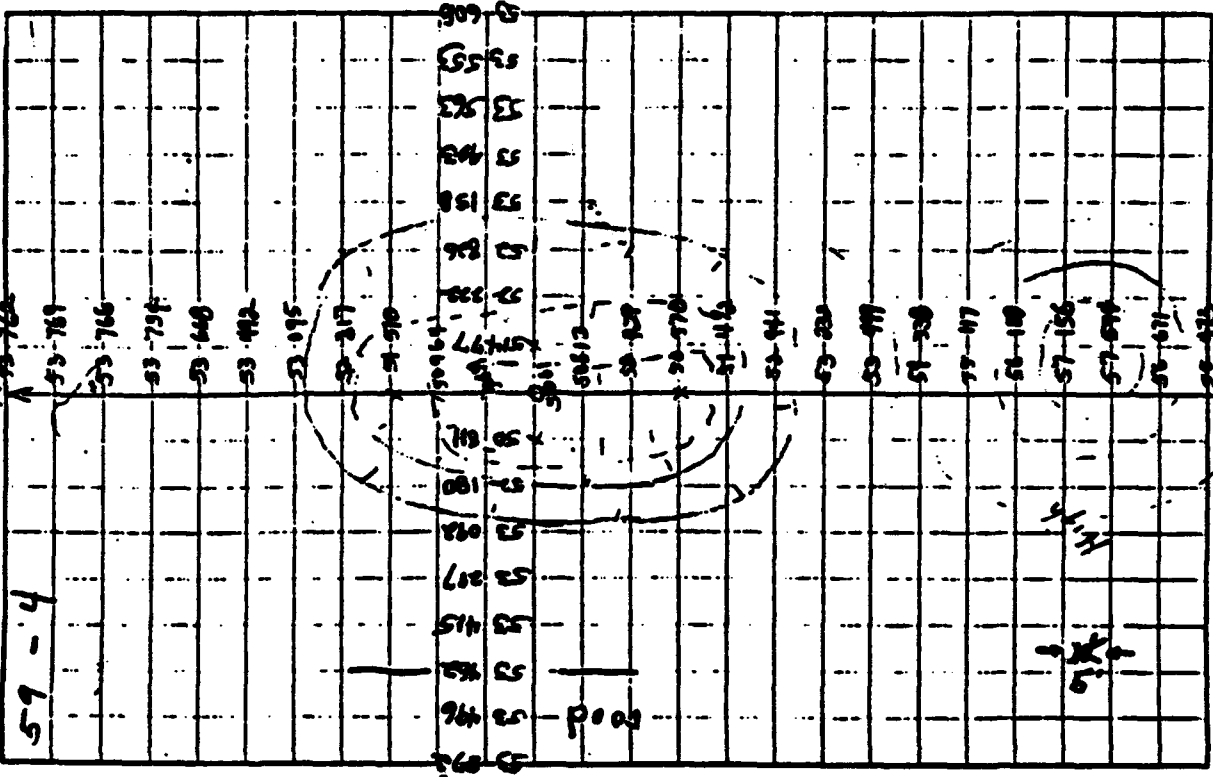
1 Intense H2O anomaly

36'30"

D 2514 from G-0

5 Trench 2C Zone

59-4



7-8-92

59-5 E-W Trench

X 98' x 10' x 12' 10" center of Geophysical  
D - 164.5' well from G-0 anomaly

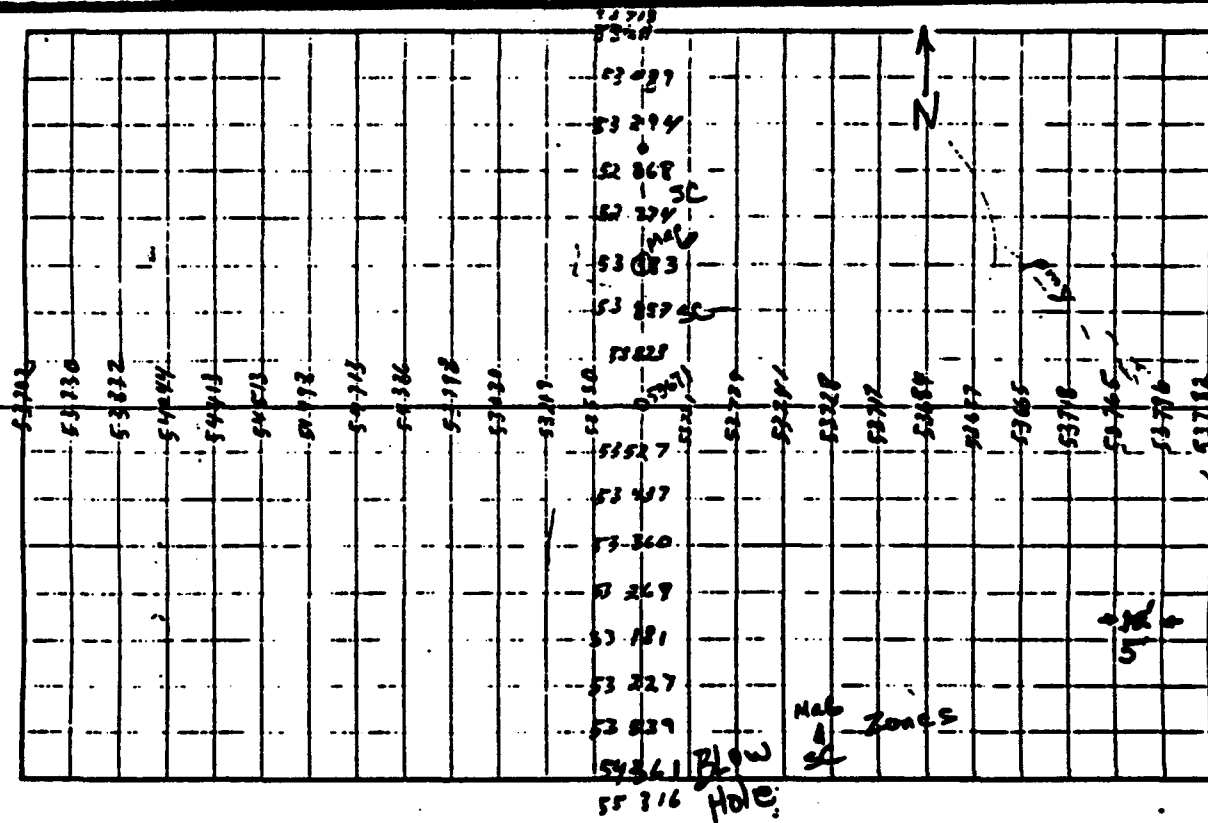
SC Zone Coincident with Maco

97' To Juniper Tree Trunk Center  
from 57.5' Rec

80' from Juniper Tree Trunk

to center of Trench on SW side  
at 1' angle

53 705

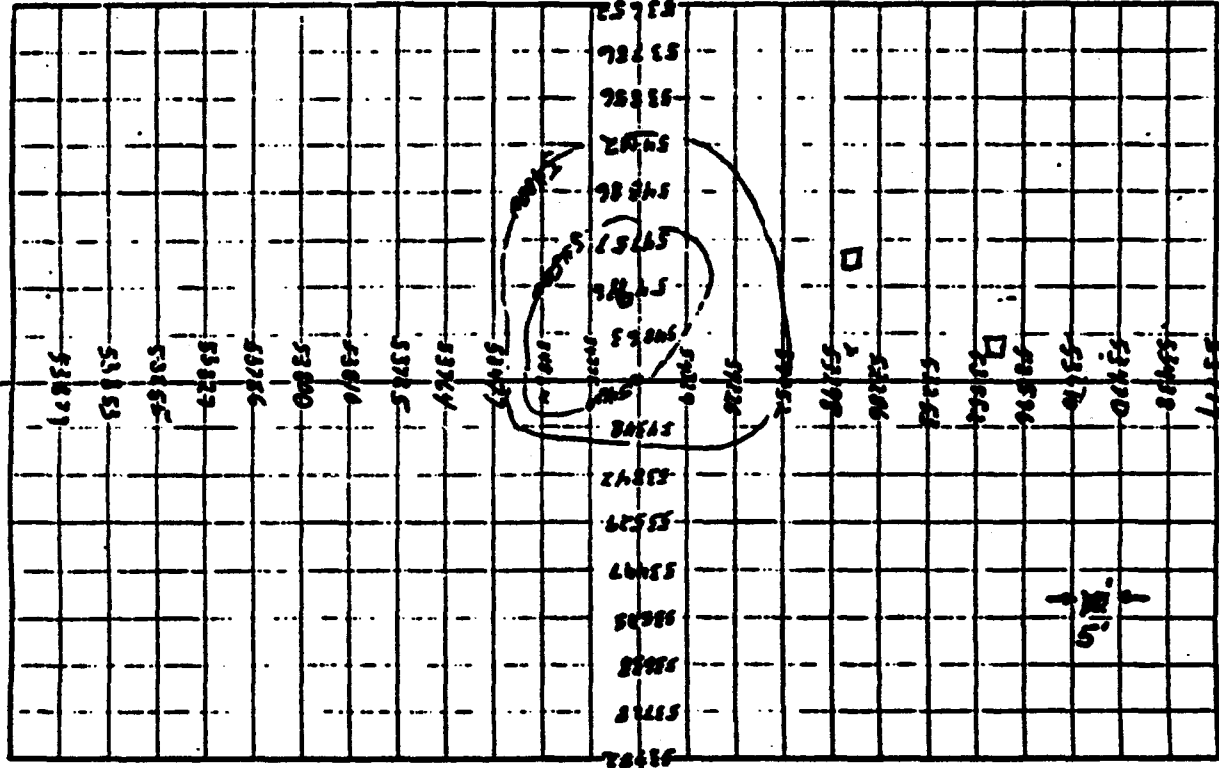


7-9-92

59-6 E-W Trench

X 17341511-47°45'32" center of Geophysical  
D 10589 2434 from G-0 Annually

70 feet from Re E to and center



7-9-92

59-7 Lagoon Area

X 43°43'30"

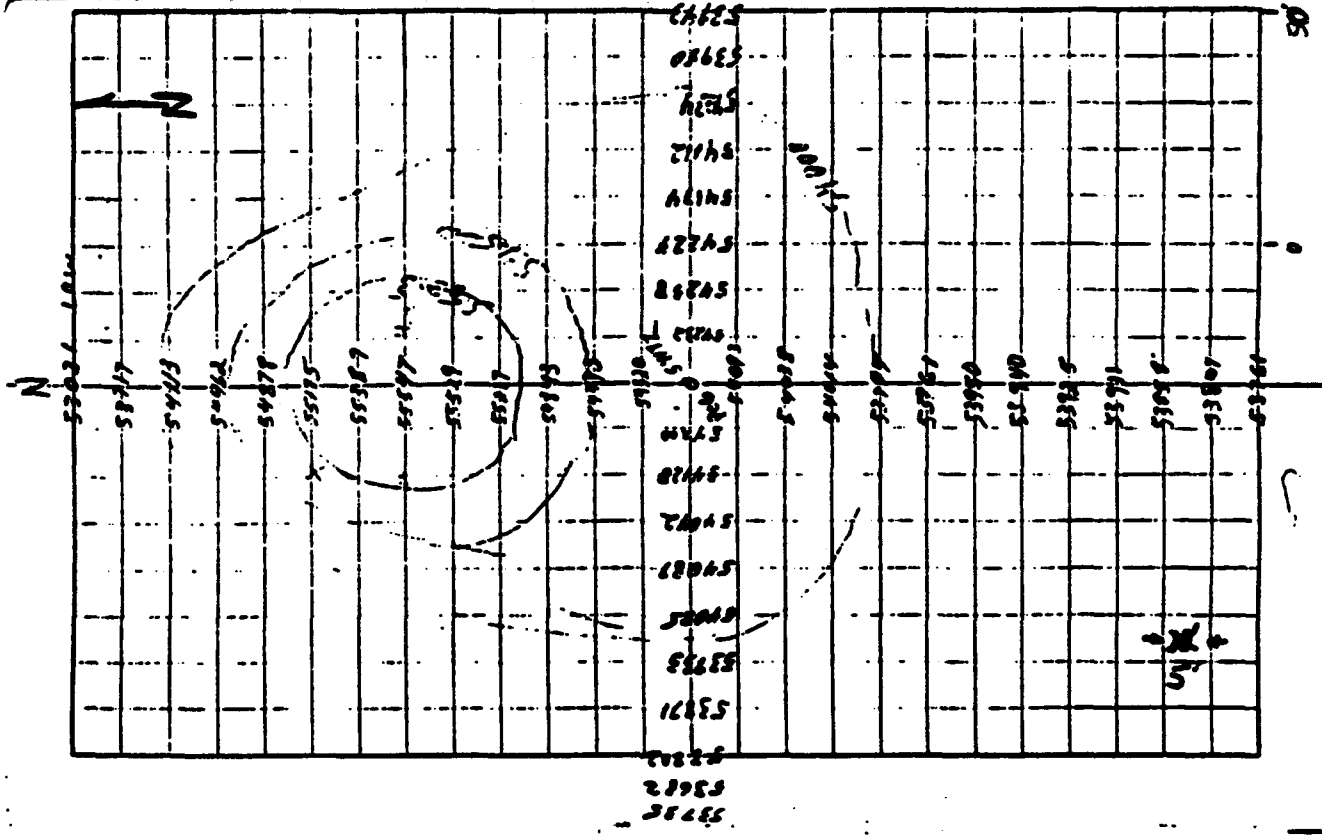
D 1232 from 6-0

No obvious Mac feature

High Background in Lagoon Area  
70 to 90 m m

SC Zone 90 m 80' N of Lathe

SC Zone 100' W of Lathe



7-9-92

59-9 E-W Trench

Located at Best

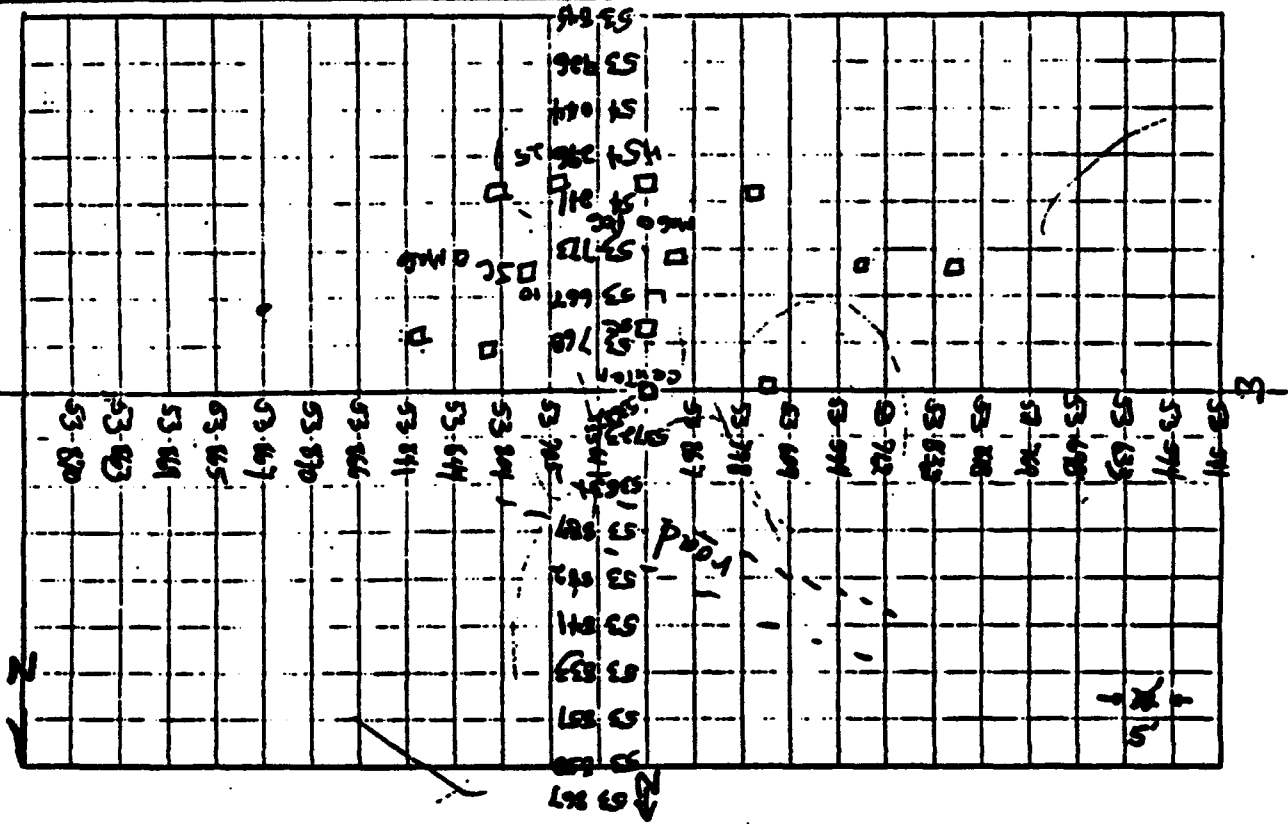
X 45° 55' 01"

D 2437 from 6-0

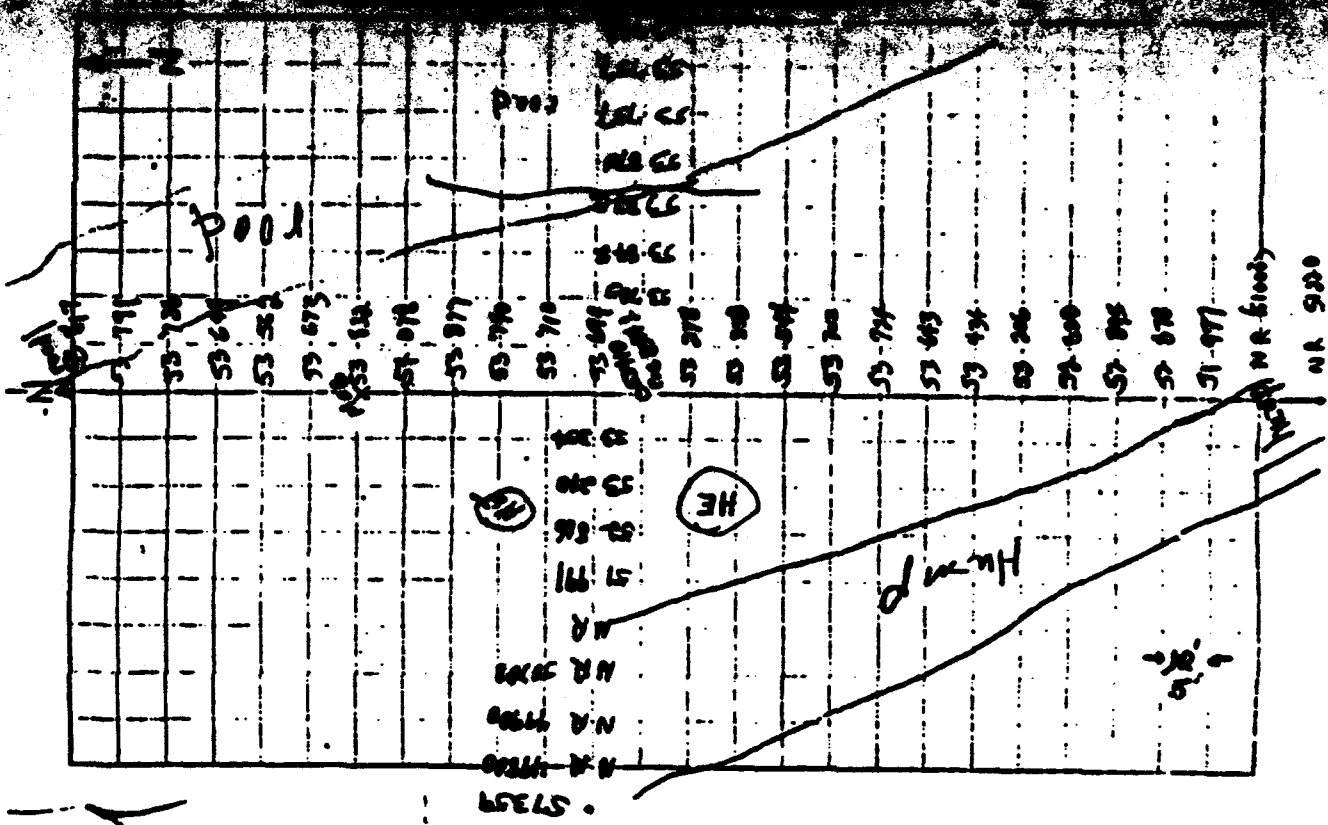
bed 15' North of POC

Trench center 15' South of Lthe

□ on sketch map = Soil Conf. Acorn



$\phi = 34.96^\circ/2''$  from G-0



7-11-92

59-11 E 25° N Trench

60' SW of road Ctr

150' ENE of 59-7

20' N of E-W road Truck at on this

46° 04' 44" from G-O

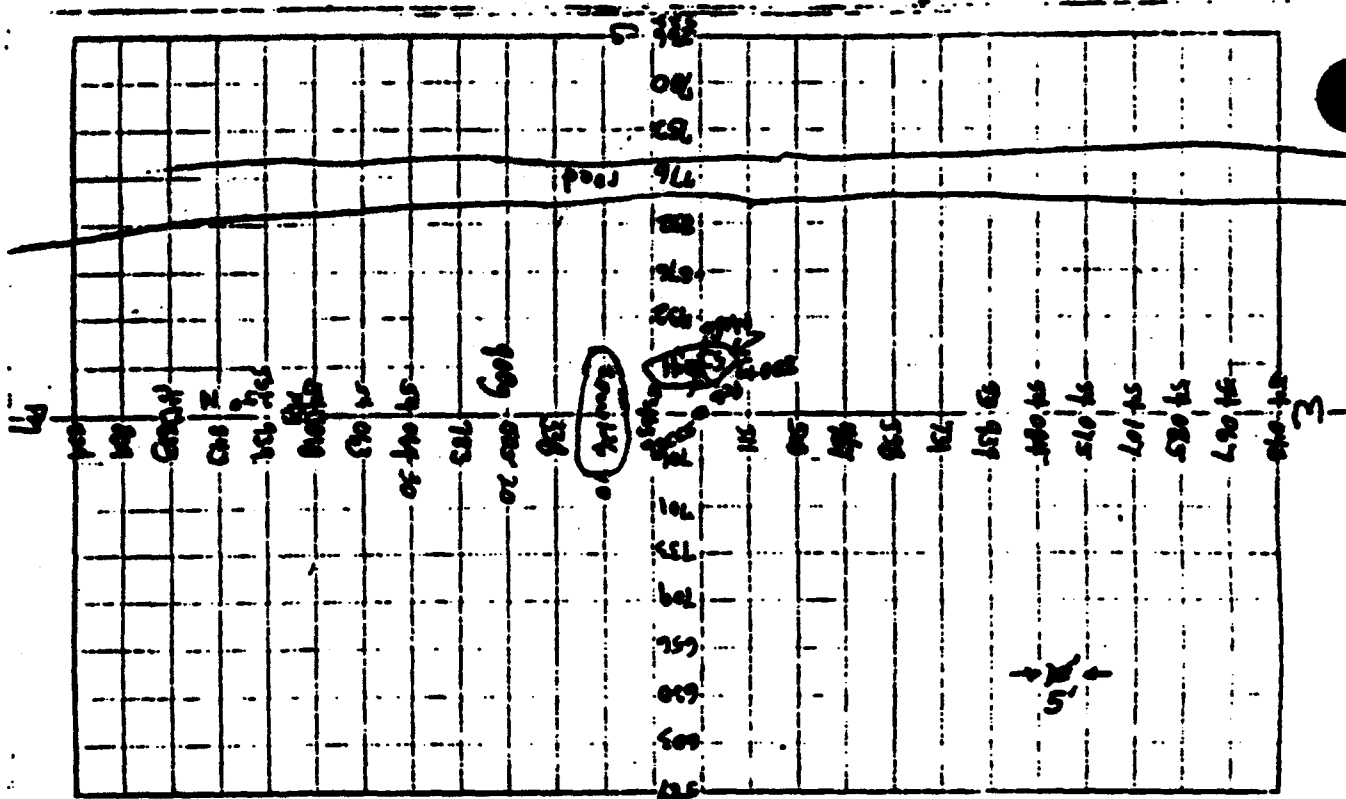
D 2131

Weak SC (B) Zones

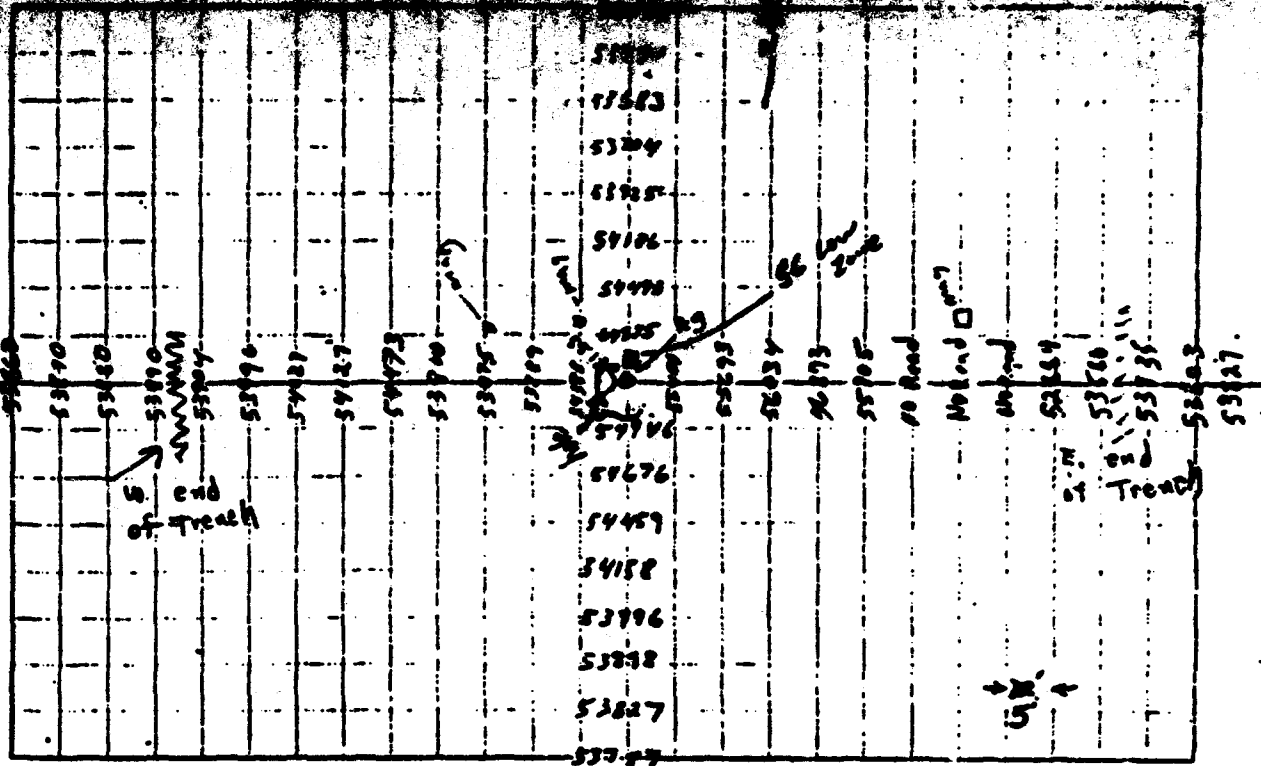
Moderate Mbk Zone

- Mesopale

2 1/2' 0.5'





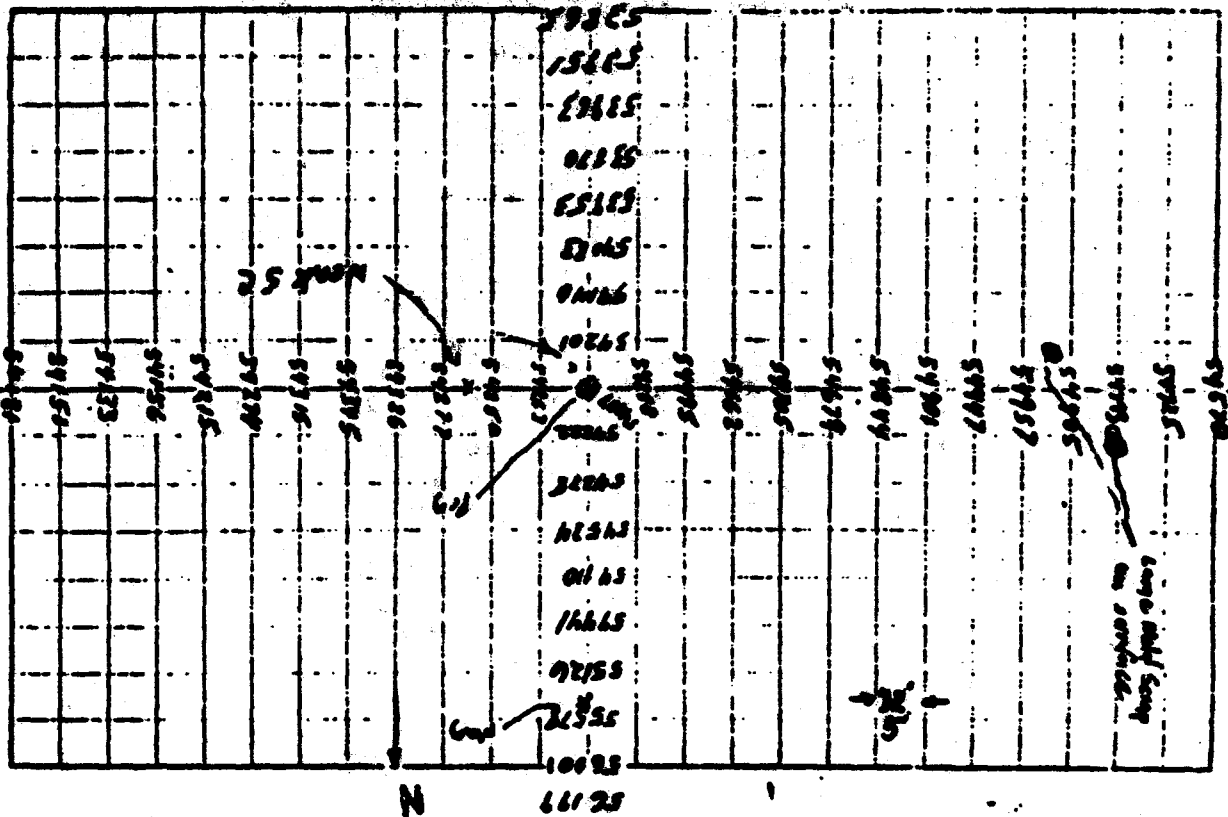
$$b = 1740$$


7-11-92

57-12 E 25° N Trench  
No Name by Station  
250' S of 57-11

$\angle = 40^\circ 46' 22''$  from C-0  
D = 1946

18025  
17125  
16125  
15125





7-11-92

66-15 intersection of Trenches

(2) possible Trenches in Photo

50' S of road

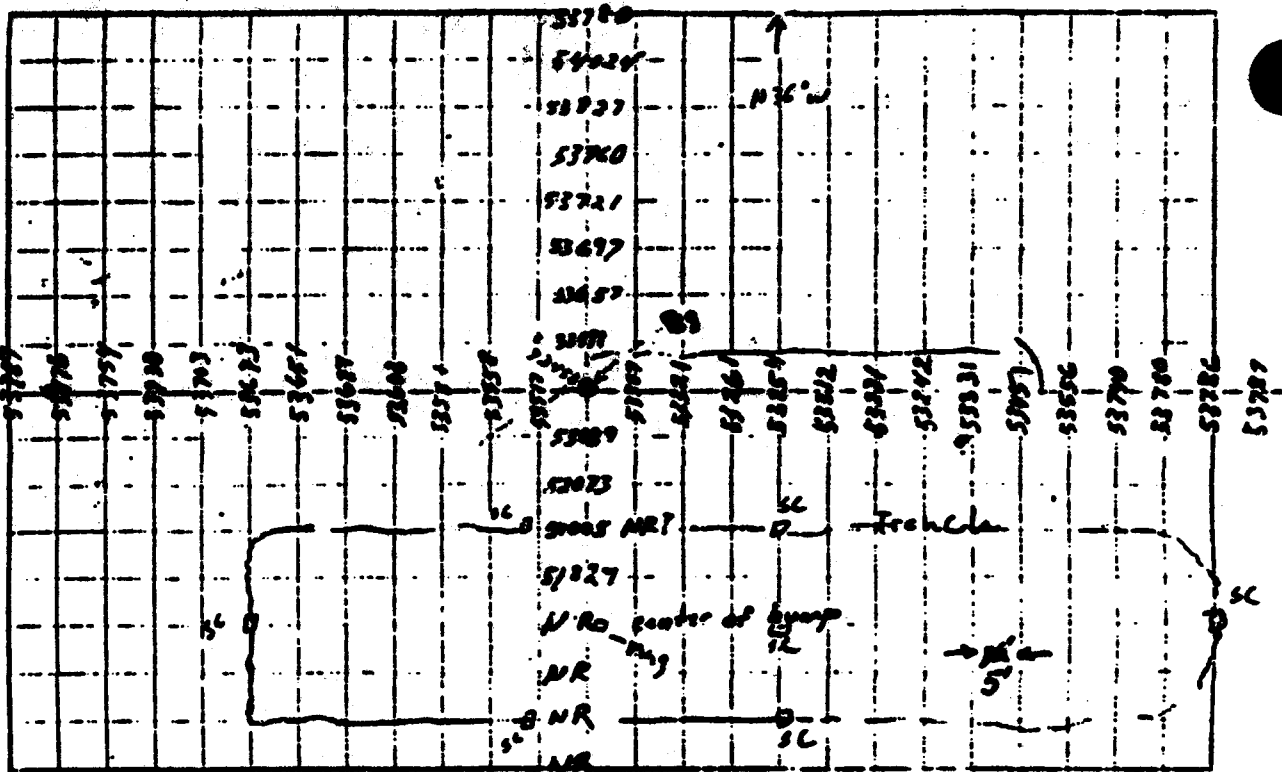
90' W of road

175' NNW of 66-16

X 73° 23' 40" from 60-A

D 2811

53925  
53925  
54021  
54023  
54127



53891

7-11-92

66-16

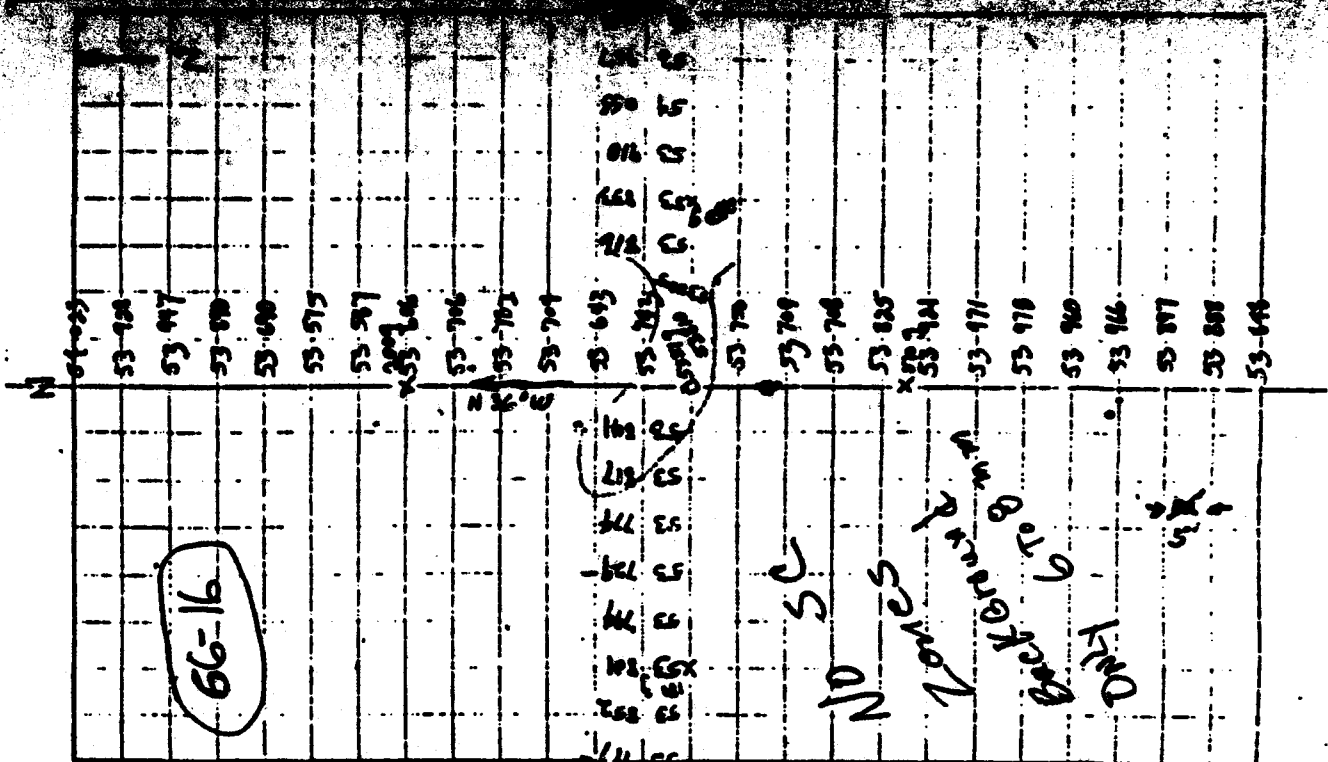
Intersection of Trench

95' W of d-s road

155' NNE of 66-17

X 74° 10' 00" from 60-A  
D 2635

52 55  
52 55  
52 55



D 2479

	7-11-92	
66-17	inter section of Trenches 90' W of ss road cTr 160' NNW of 66-18	
X	74°56'55" From G=0A	
D	2479	

[illegible]

66-10	Intersection of Trachas 90' W of N-S road ctr. 160' NWW of 66-19
-------	--

Weak Zone

75° 39' 48"	From C-O-A
D 2351	

W

Time

100  
90  
80  
70  
60  
50  
40  
30  
20  
10  
0

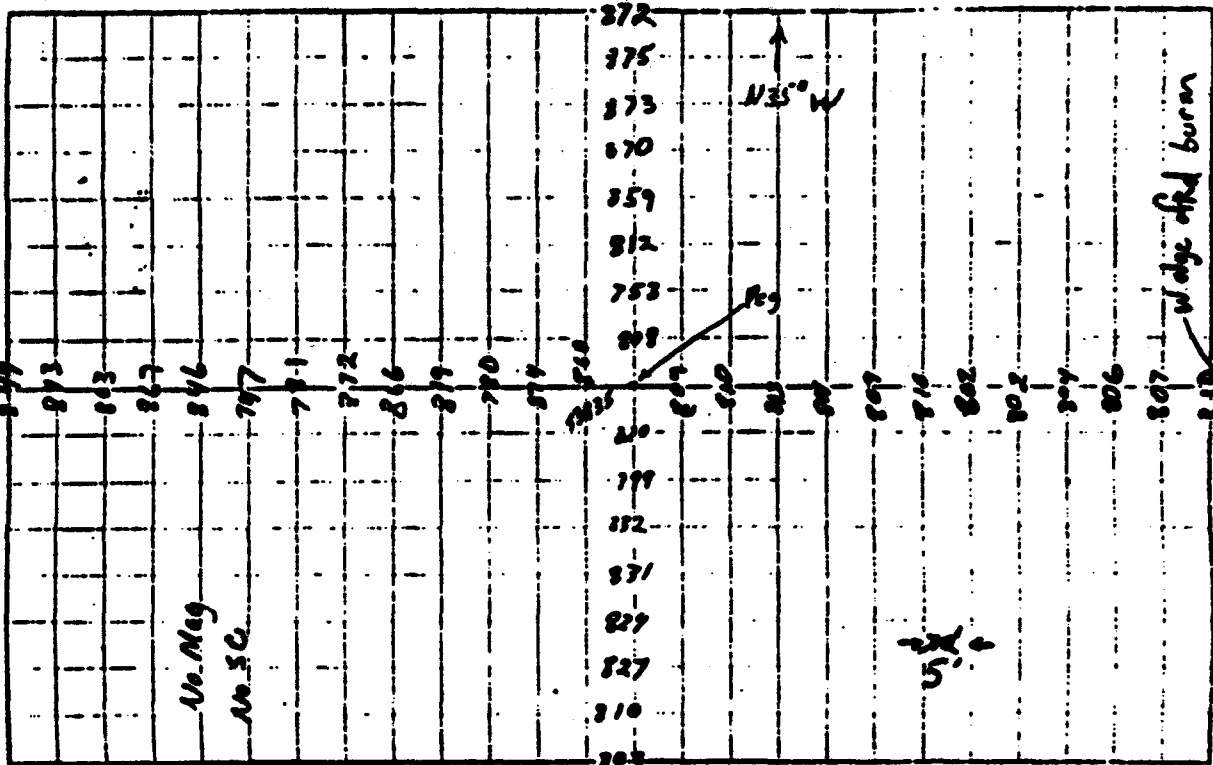
0 1 2 3 4 5 6 7 8 9 10

7-11-92

166-19 Intersection of Little Burn Area  
8 and Southern Most Cross  
feature.

75' WJ of N-S road

X 76'39" from G-0A  
D 2197



797



7-10-92

66-20 Blow Hole - elevated to south

155' SE of Juniper

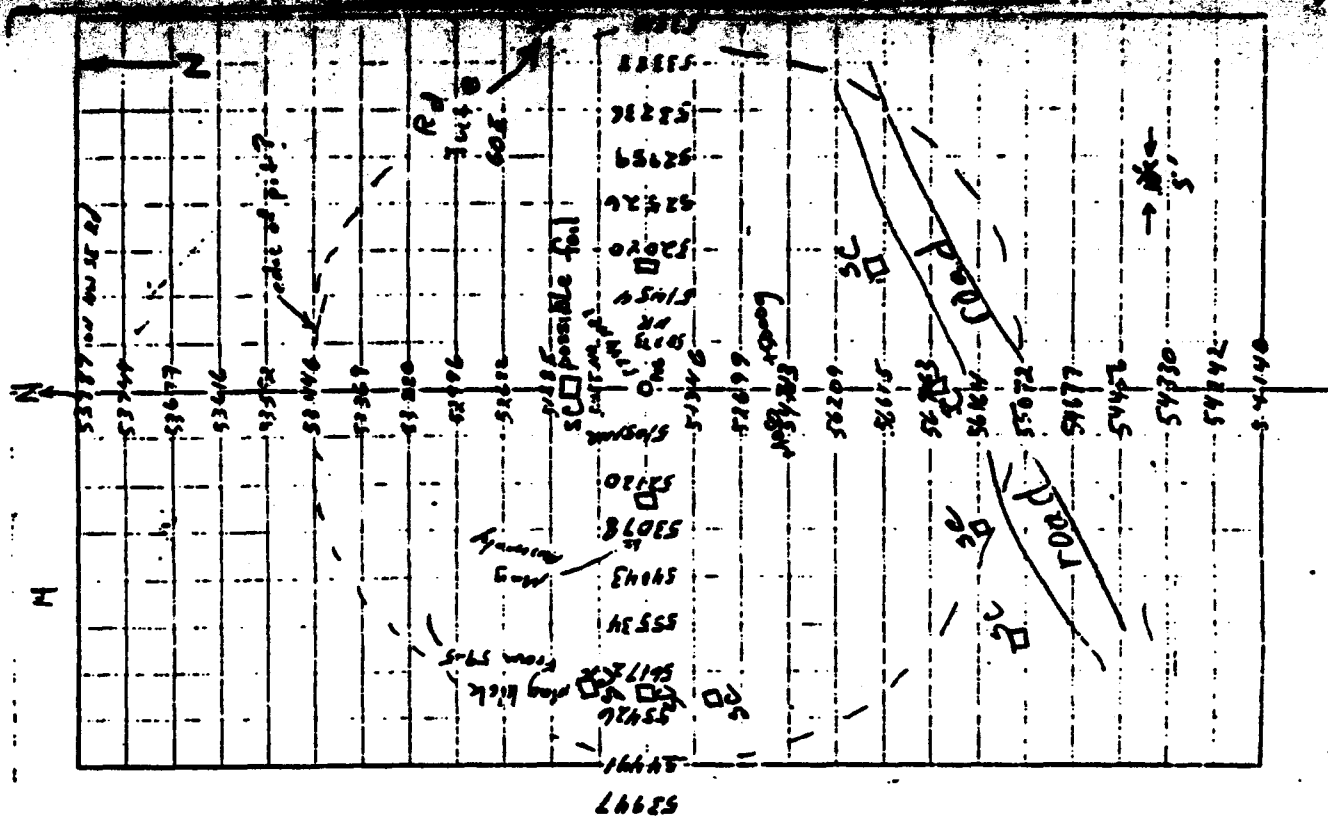
160' NE of road TP on Route

70' SSE of 57-5 poC

Pit approx 75' in Diameter

$\Delta = 42'44'42''$  from C-0

D = 2542



7-12-92  
General Placement (Paved)

78-21

60' N of N-S road

65' S of 59-10

78-22

135' ENE from 78-21

65' E of N-S road

78-23

125' E of 78-22

78-24

105' E of 78-23

65' N of 59-13

78-25

102' E of 78-24

140' SSE of 59-11

115' SSE of E-W road

78-26

120' E of 78-25

150' S of road junction

78-27

85' E of 78-26

115' S of road

78-28

95' E of 78-27

110' S of road

78-29

95' E of 78-28

115' S of road

7-12-72

**78-21**

[illegible]

fat	fat
-----	-----

60' W of N-S road

65, 5, f 54-10

V-S Technik

11R Mag. extremely rare 55' to 95' North of ridge  
Strong S.E. breeze - forecast in 70' N. of p.e.

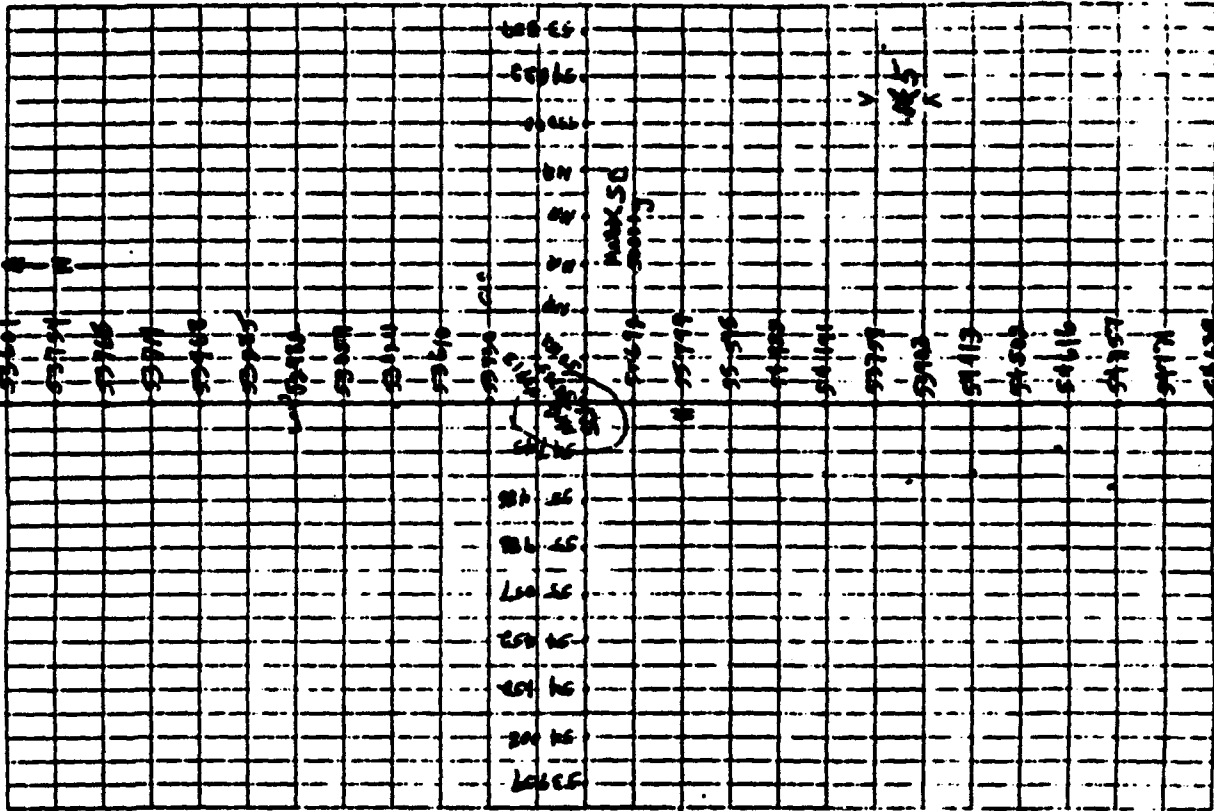
Strong 36 hours raised in 70° N of p.p.

from mag NR on E-W strike

13.71	72.21
-------	-------

Hand-drawn map on a grid showing a coastline and various locations. The map is oriented with North at the top. A coastline runs vertically on the right side, with several points labeled. To the left of the coastline, there are several small islands or peninsulas, some of which are labeled. A large area on the left is labeled 'S. 100' and 'S. 100'. A small area on the right is labeled 'S. 100' and 'S. 100'. The map is drawn on a grid with a scale of 1 inch = 1 mile. A north arrow is located in the upper right corner.

possible for 2 parallel Trunks	
--------------------------------	--

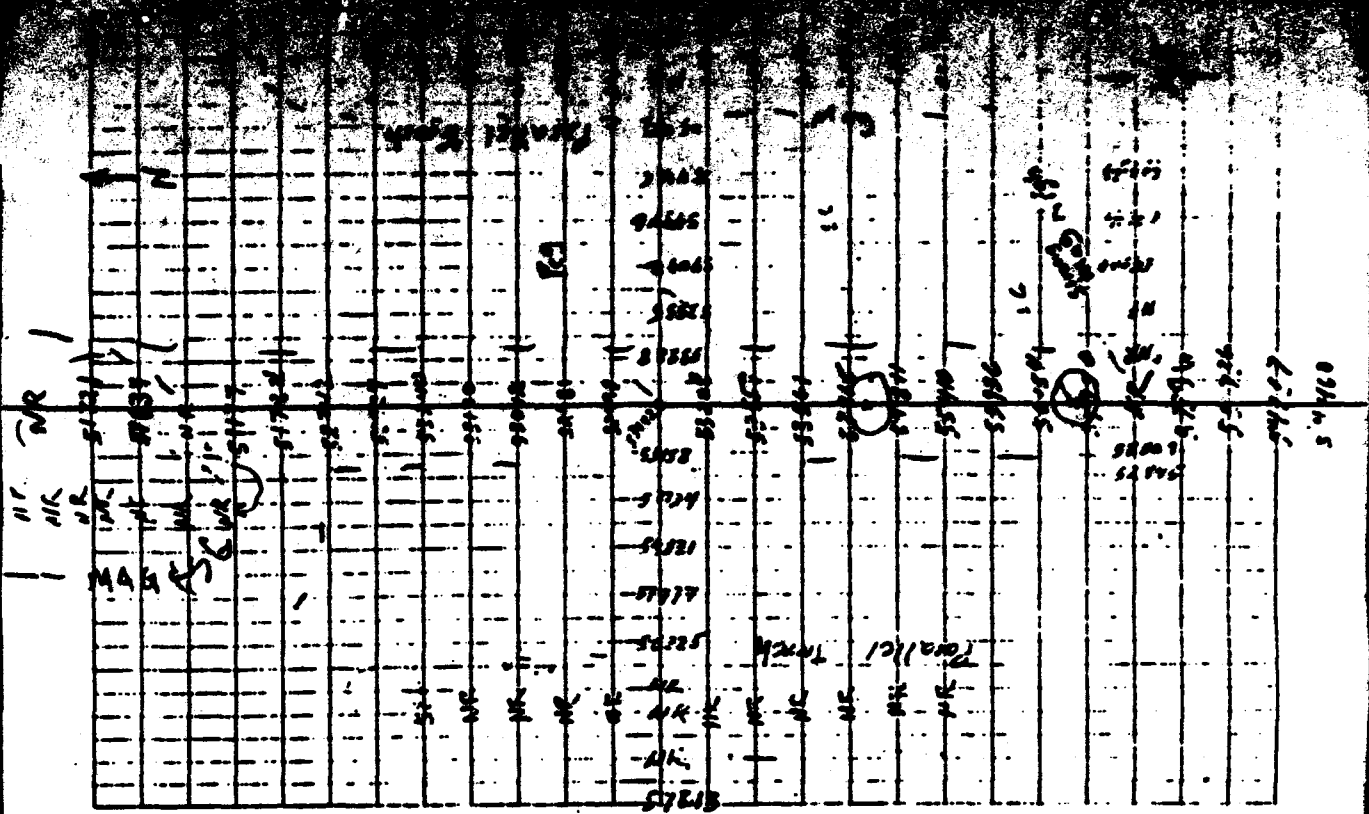


76-23

Faced

125' E of 78-22

very strong SC and was extremely hard  
2: 0.000, 2.000, 2.000, 2.000



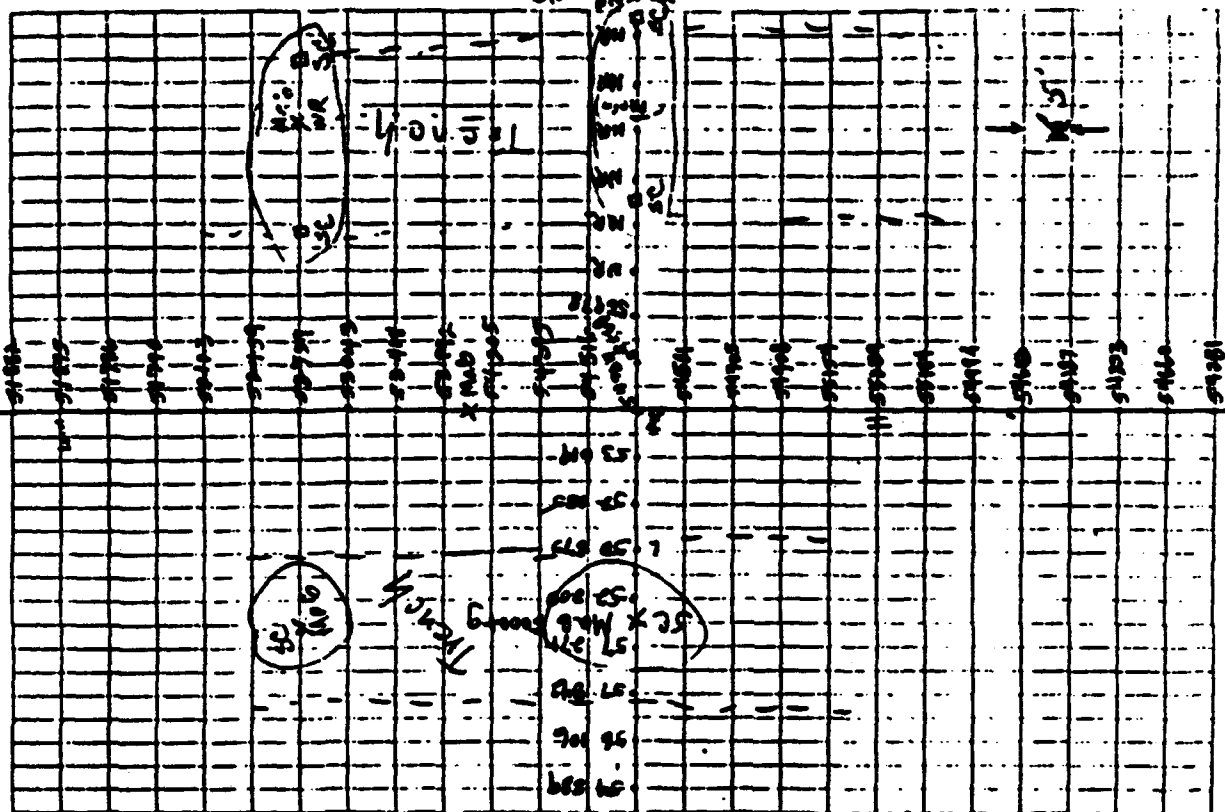
7-13-92

N-3 Trench

78-24

Paced  
105' E of 78-23  
65' N of 59-13

11245.2  
11255.  
11255.  
11255.  
11255.1



7-13-92

N-S Trench

70-25

Paced

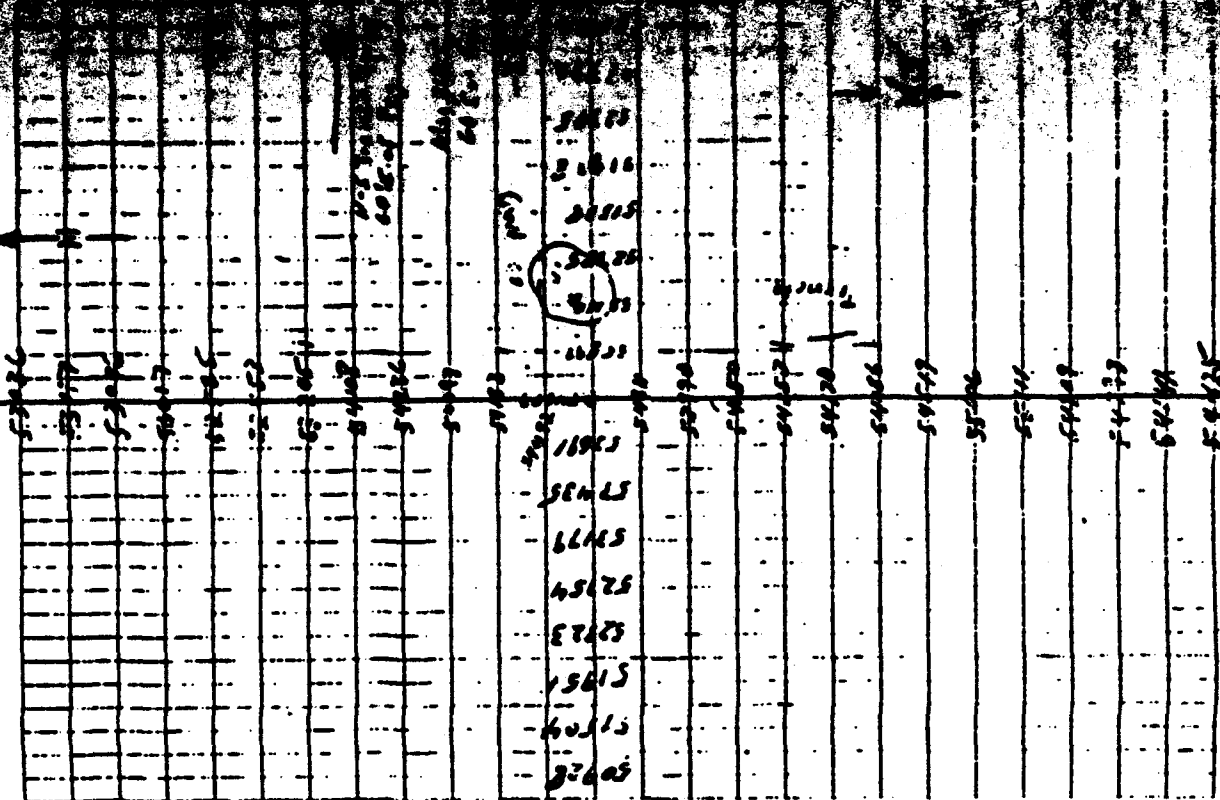
102' E of 70-24

140' SSE of 59-11

115' SSE of E-W road

Trench every 50' apart

Trench from 70-24  
N 115'



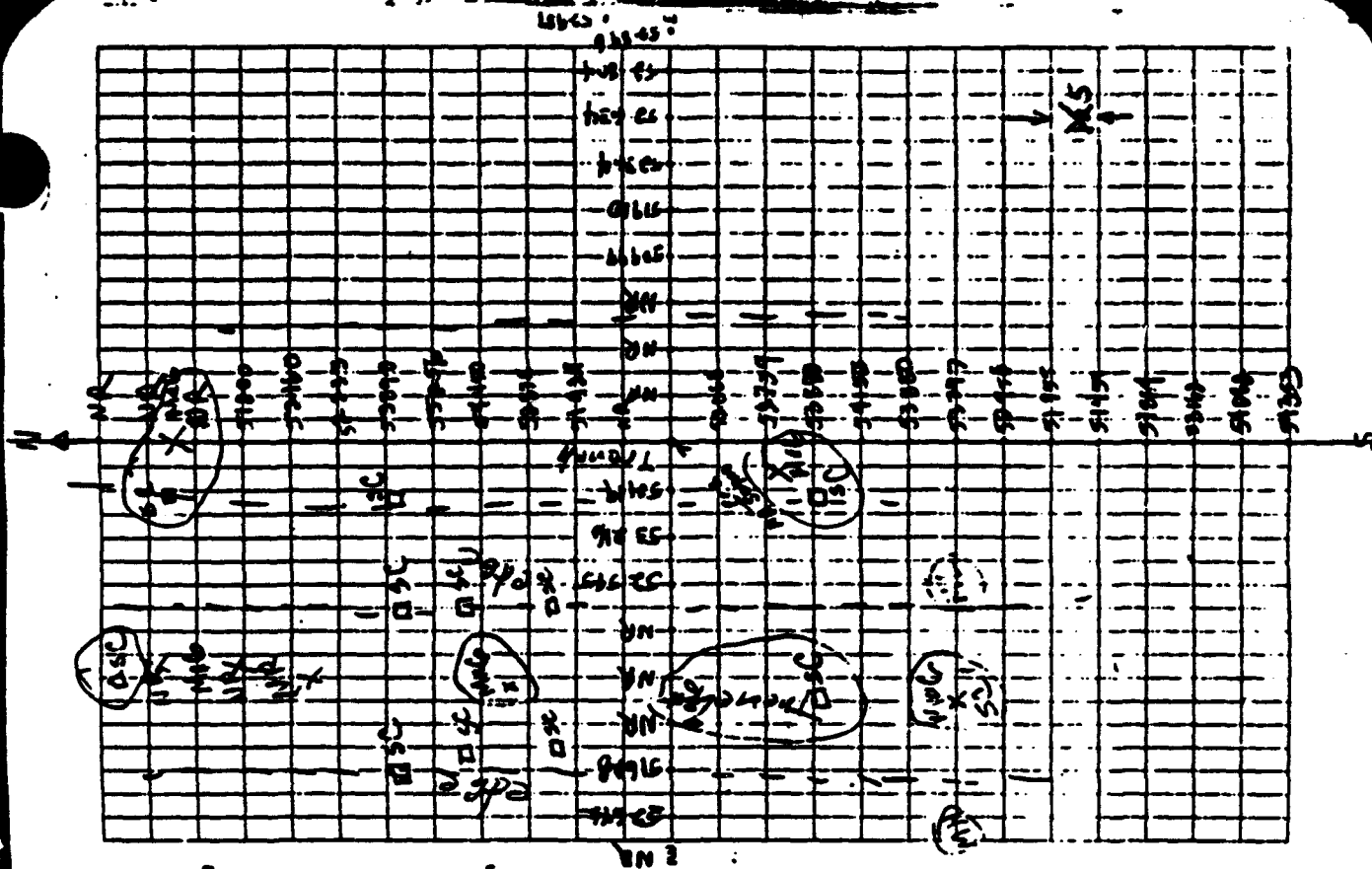
N-S Trench

Page

120' E of 70-25

150	5	0	5	of	red	investment
-----	---	---	---	----	-----	------------

3 Trenches 36' apart





70-27

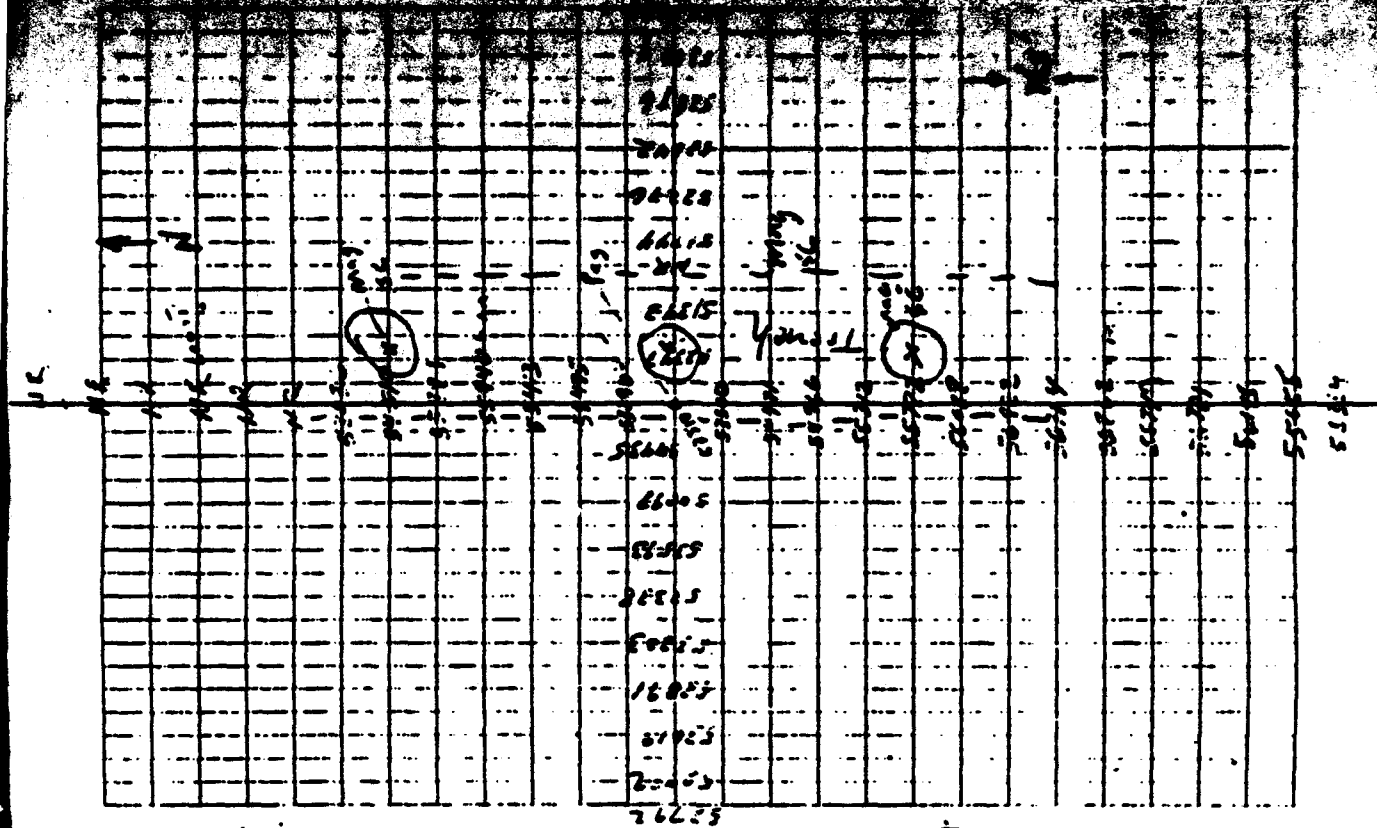
short N-S Trench

fact

85'	E of	78-26
-----	------	-------

115'	S of road
------	-----------

not - c of track on map and  
see stakes



7-13-72

Short N-S Trench

Paced

95' E of 70-27

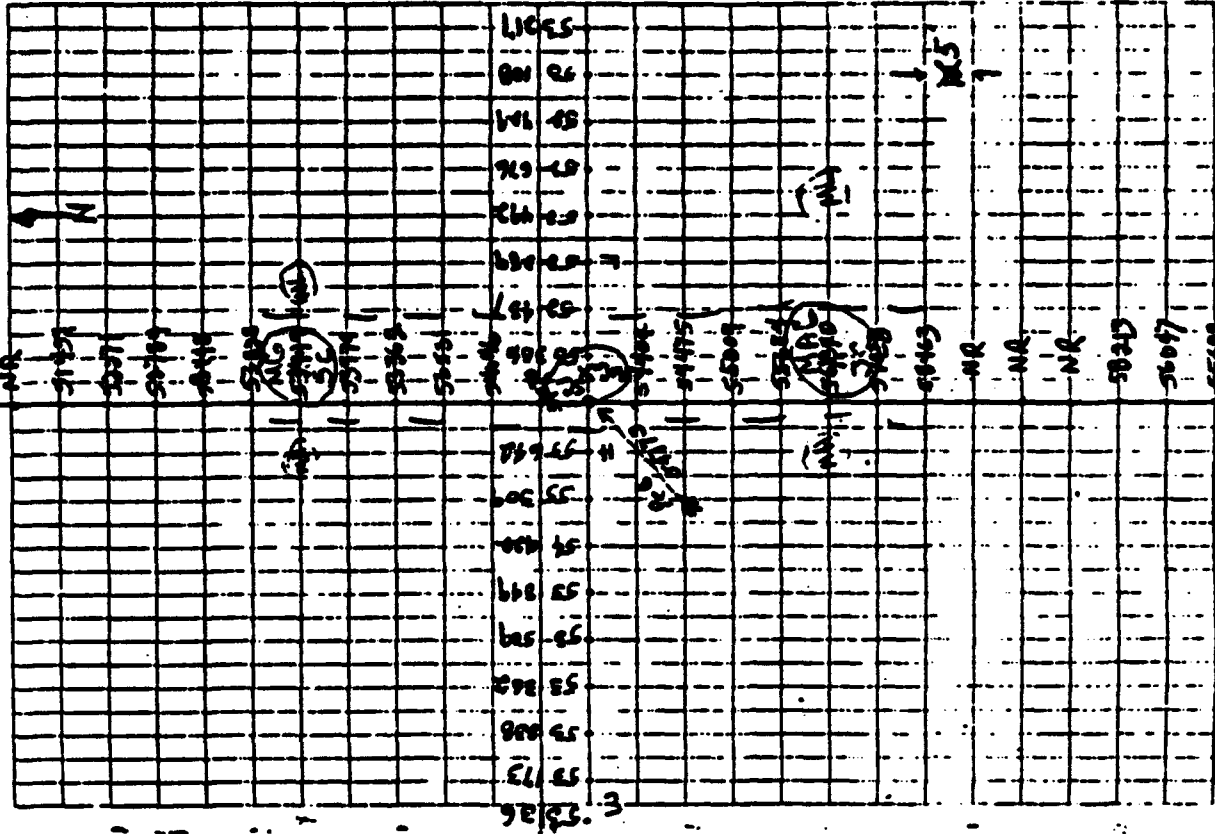
110' S of road

5000

Good Alignment of 3 incident

Scat Mag Prints in Center

of Trench



5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

5000

7-13-92

70-29 Short N-S Trench

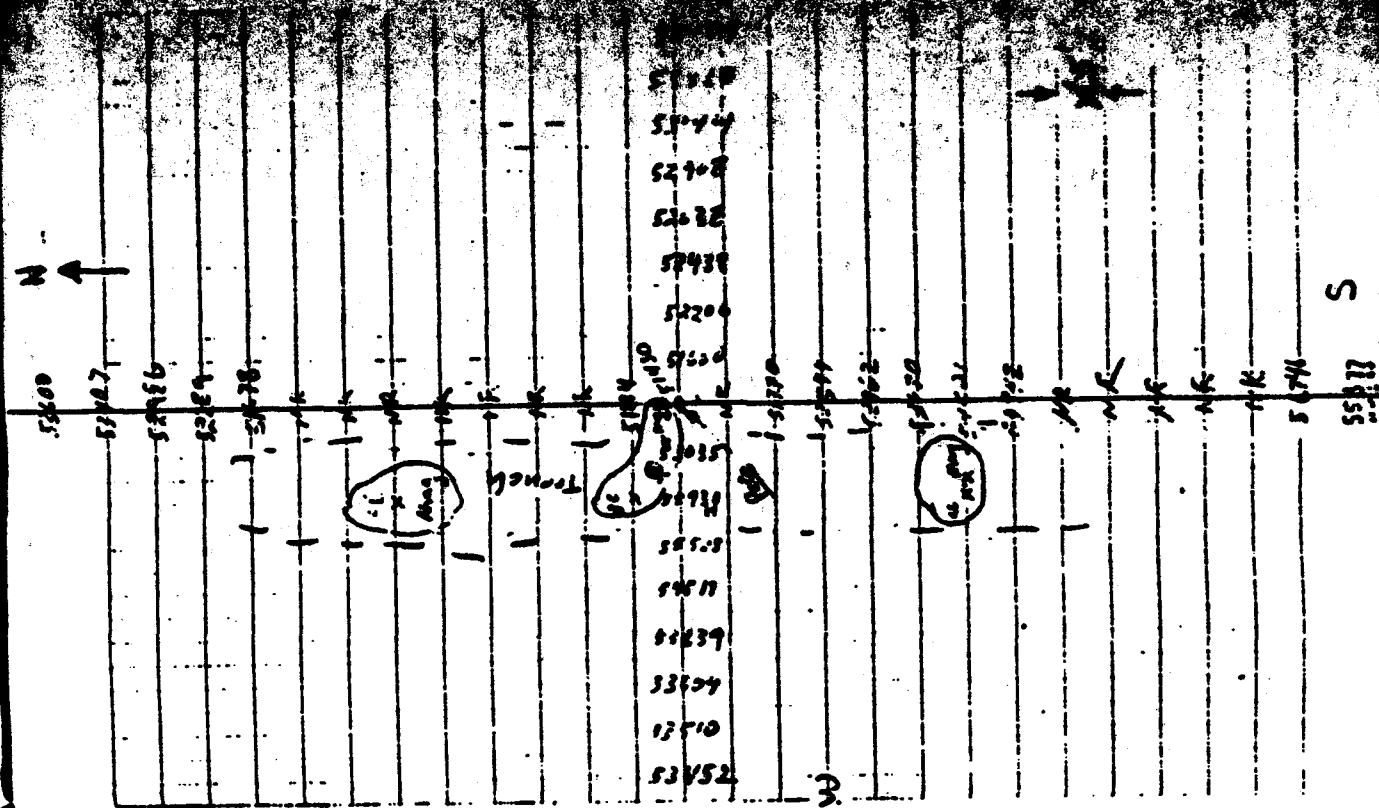
Paced

95' E of 70-28

115' S of road

Good Alignment of 3 Incident  
S<sub>1</sub> & Mag Points in Center  
of Trench

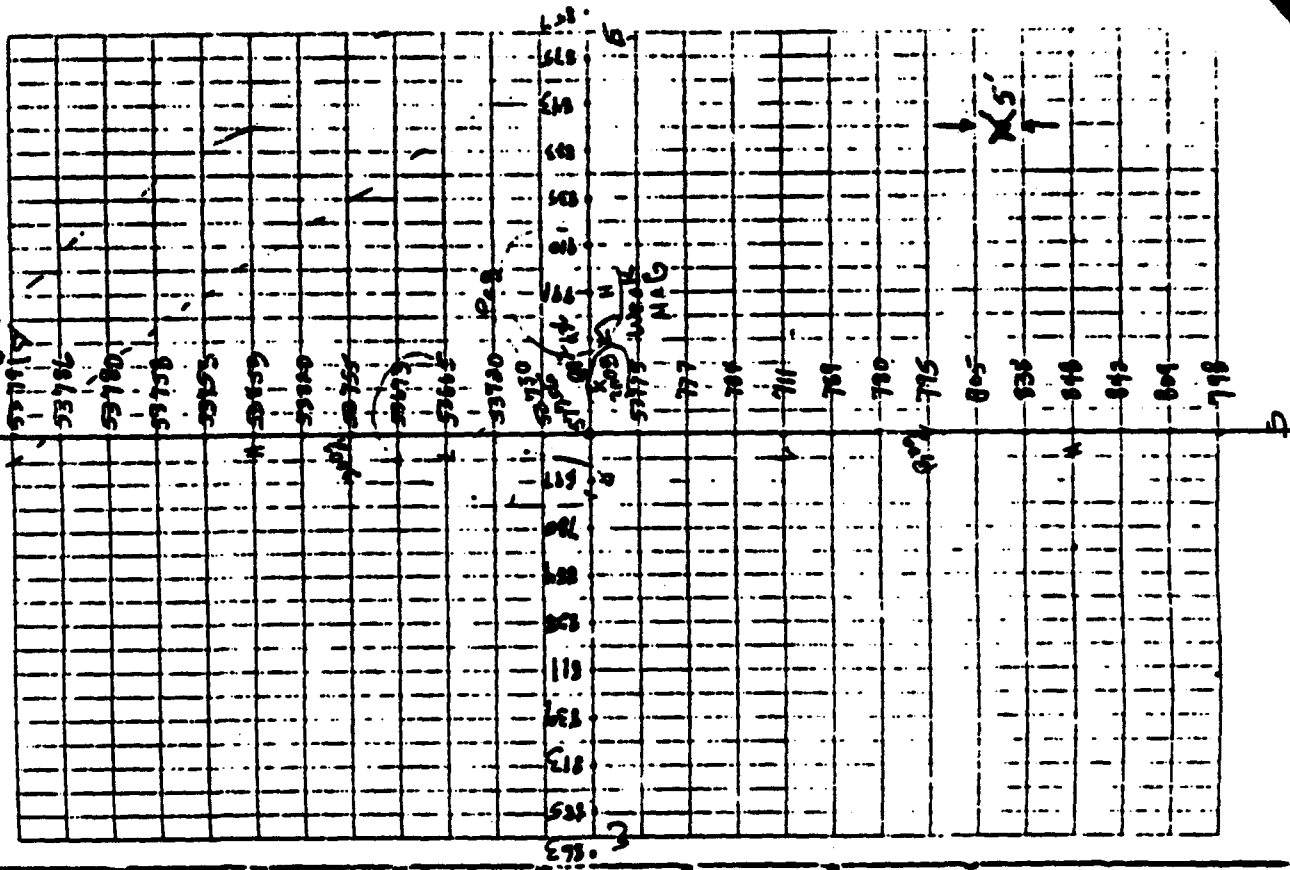
53752



78-30

Year	Turned Area
1990	100
1991	100
1992	100
1993	100
1994	100
1995	100
1996	100
1997	100
1998	100
1999	100
2000	100
2001	100
2002	100
2003	100
2004	100
2005	100
2006	100
2007	100
2008	100
2009	100
2010	100
2011	100
2012	100
2013	100
2014	100
2015	100
2016	100
2017	100
2018	100
2019	100
2020	100
2021	100
2022	100
2023	100
2024	100
2025	100
2026	100
2027	100
2028	100
2029	100
2030	100
2031	100
2032	100
2033	100
2034	100
2035	100
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2037	100
2038	100
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2064	100
2065	100
2066	100
2067	100
2068	100
2069	100
2070	100
2071	100
2072	100
2073	100
2074	100
2075	100
2076	100
2077	100
2078	100
2079	100
2080	100
2081	100
2082	100
2083	100
2084	100
2085	100
2086	100
2087	100
2088	100
2089	100
2090	100
2091	100
2092	100
2093	100
2094	100
2095	100
2096	100
2097	100
2098	100
2099	100
2100	100

Wb Strong S<sup>n</sup> Zone  
Weak S<sup>n</sup> over Barrens  
Weak Nub 300g



78-31

7-15-92

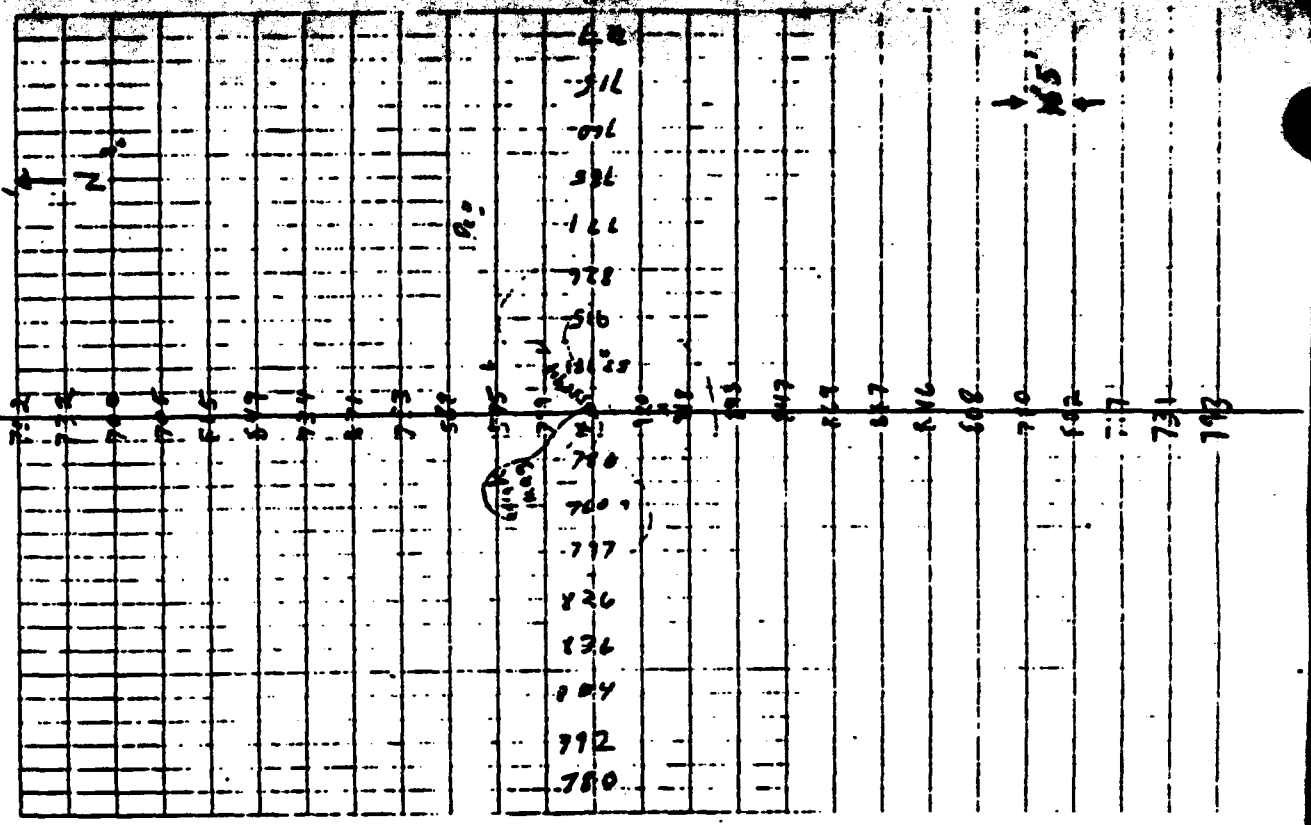
Burned Area

No SC Zones

Weak Mag Zone 350g

305

795

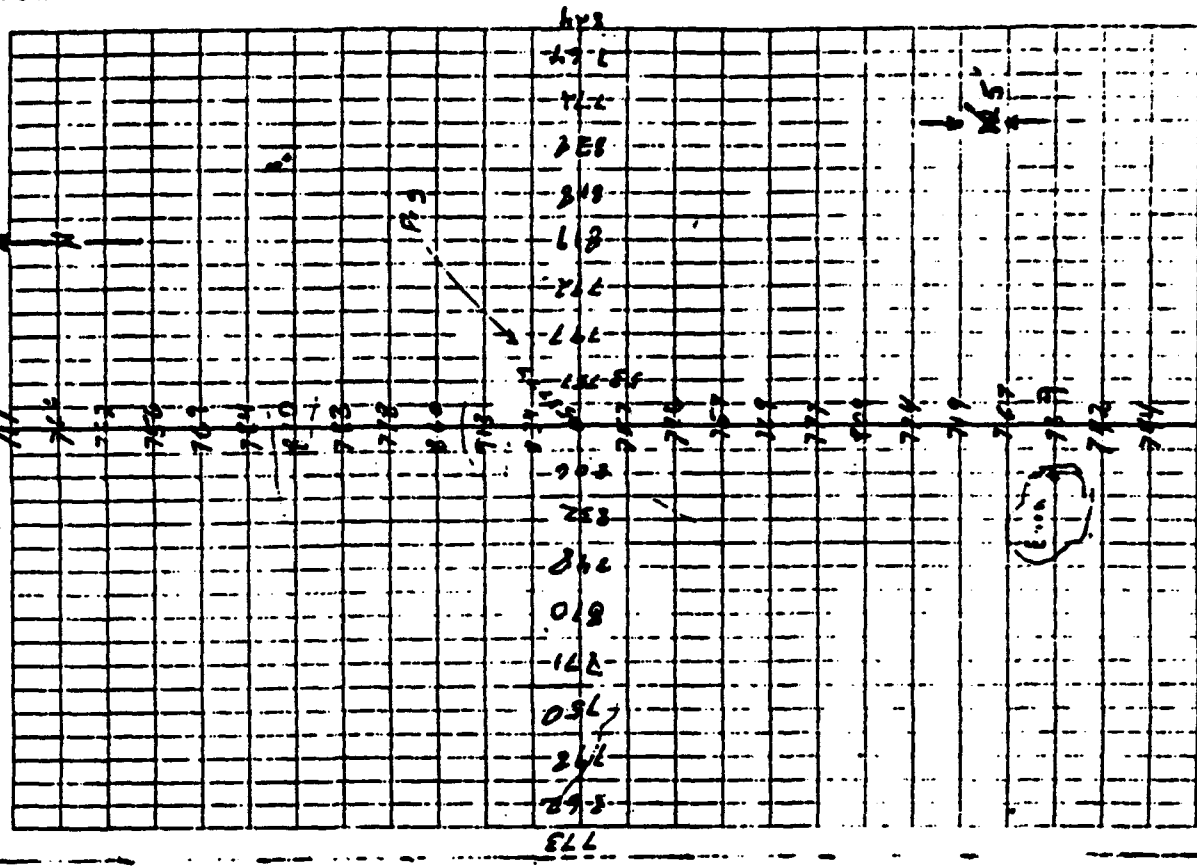


7-15-92

78-32

Burned Area

No SC  
No Niag



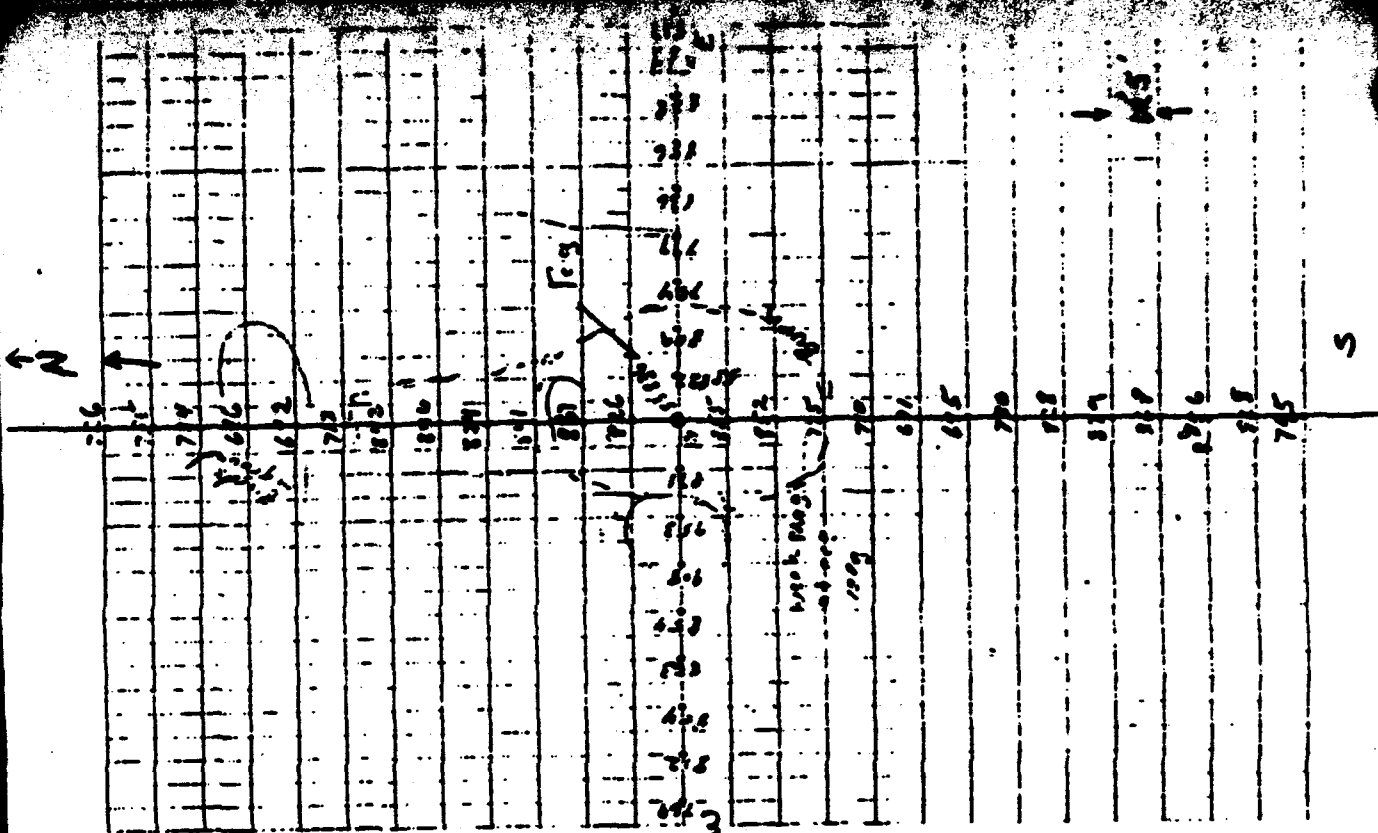
7-15-92

78-33

River Area

No SL

Work Mag at peg  
Mag Pick over Eards with wire at VSM

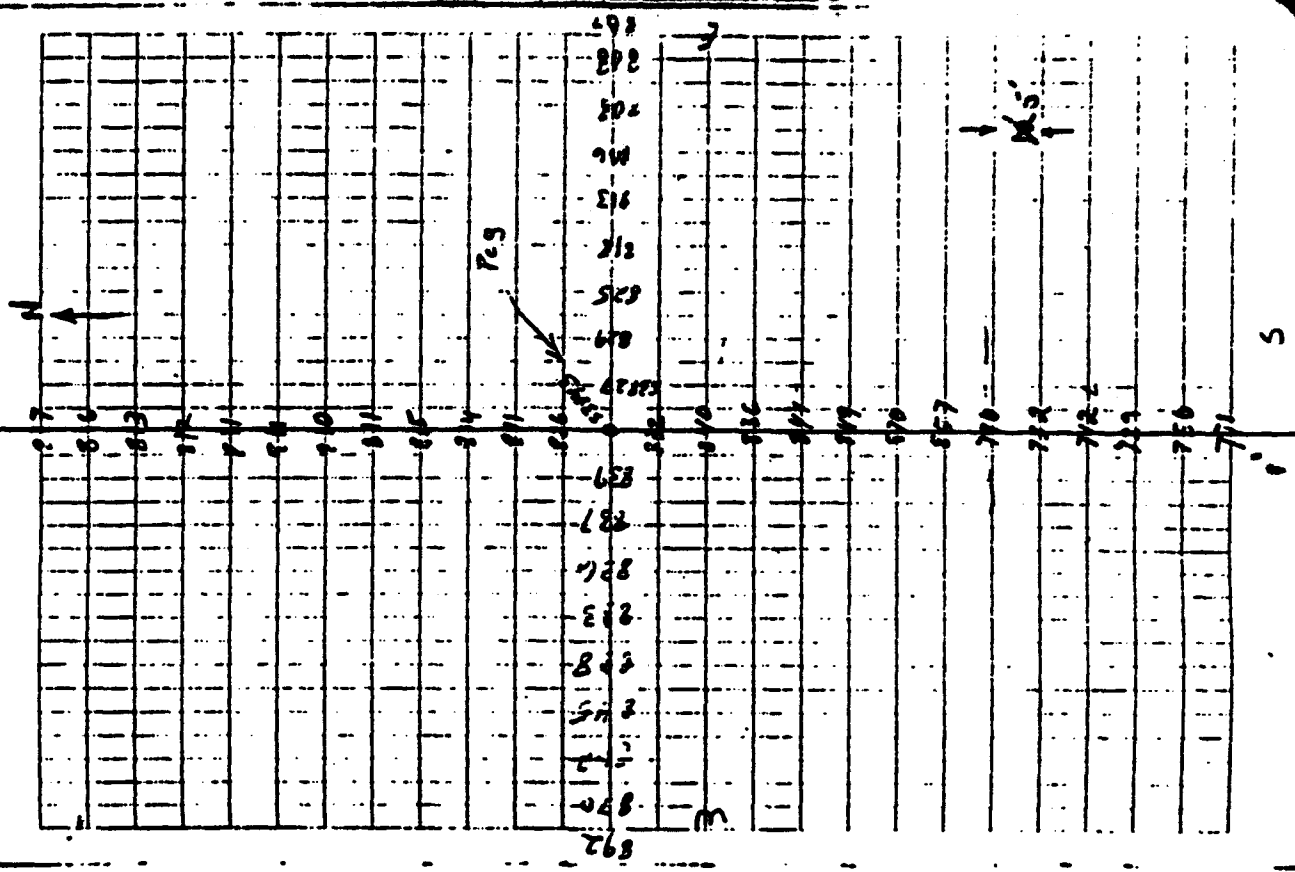


7-15-92

78-34

Small open pit

No. 56  
week mag at 90° S (100g)





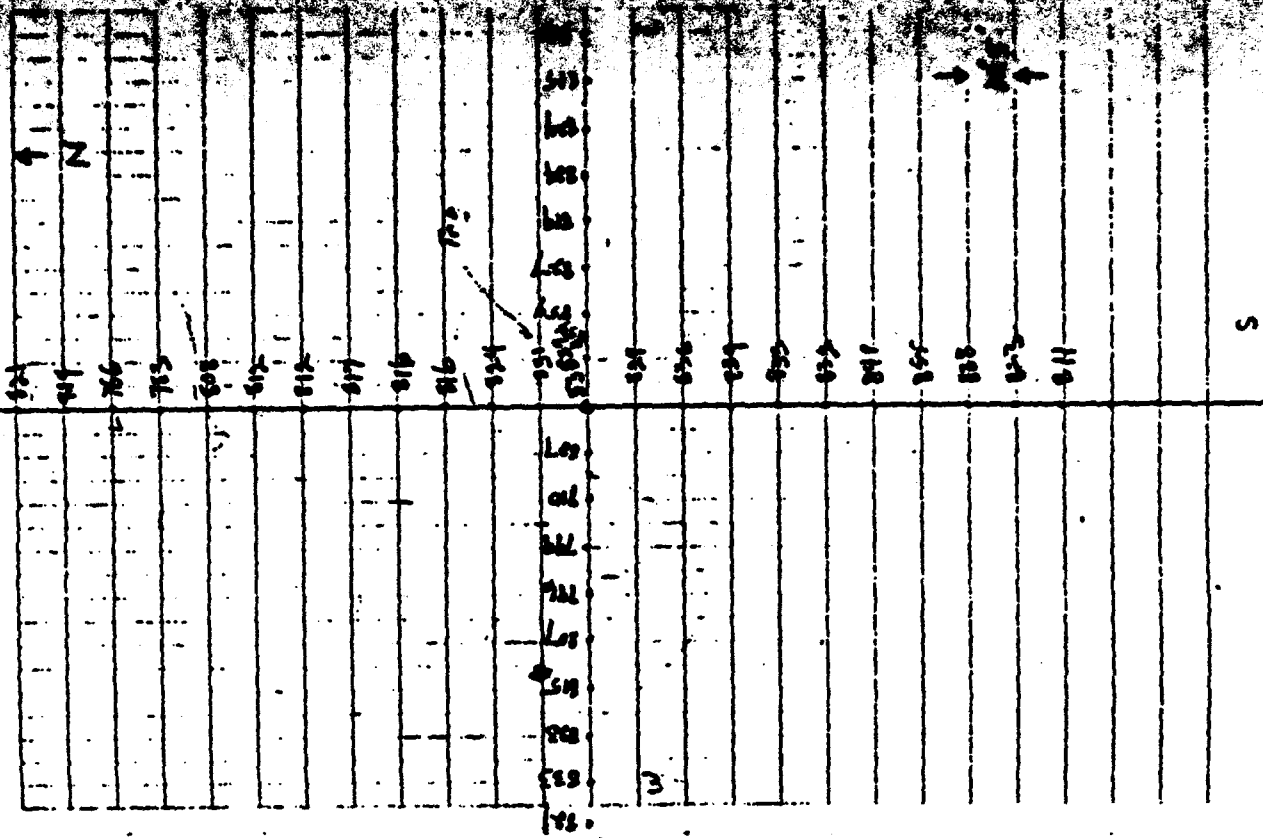
7-15-92

78-35

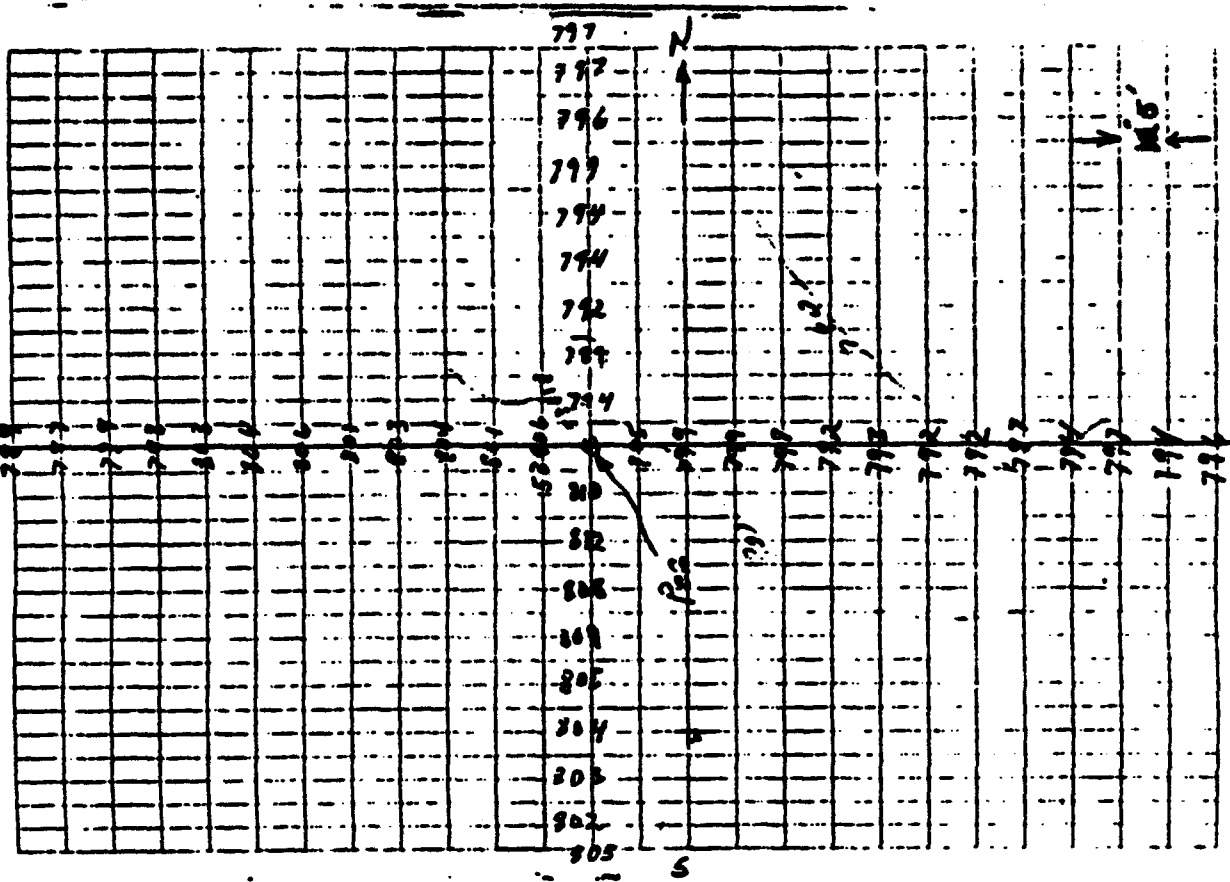
open pit

no sc

no Mag



Σ



7-16-92

E-u oval feature

Low Spot  
No SC  
No Mag

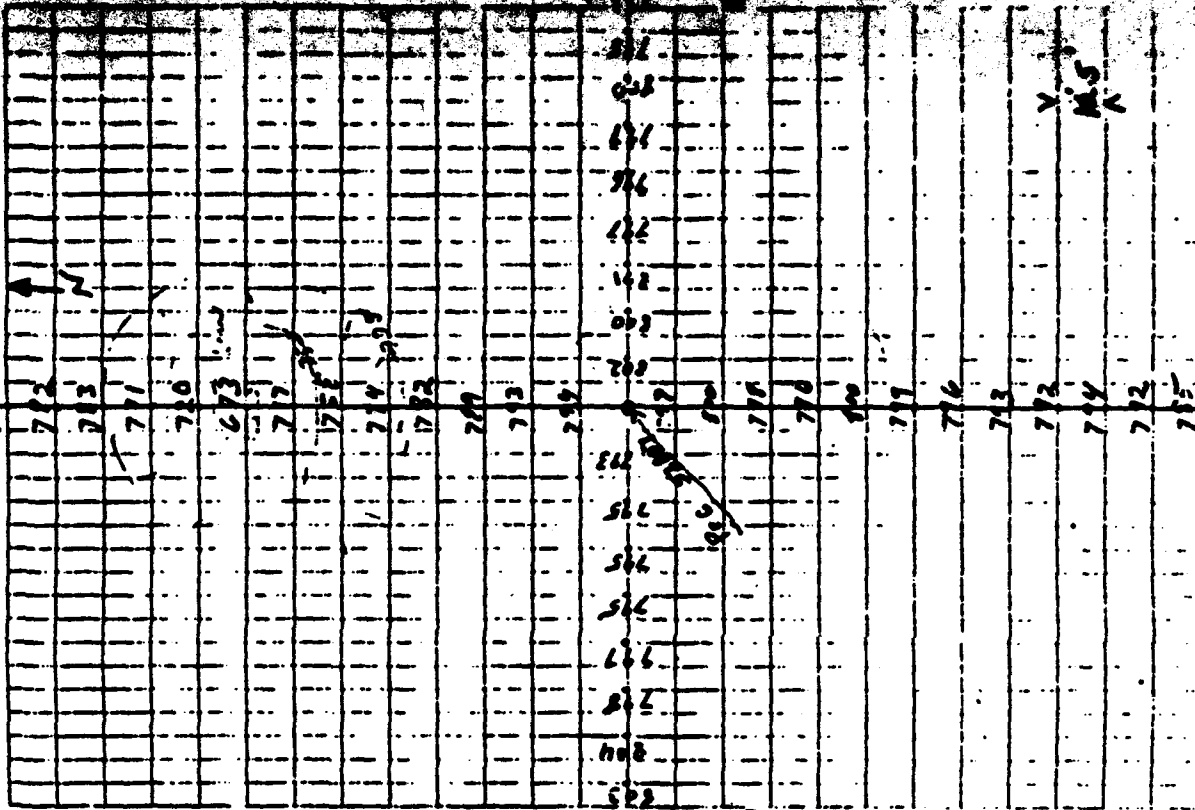
7B-36

7-6-92

78-37

N-S Feature on Ground

NO SC  
NO Mab



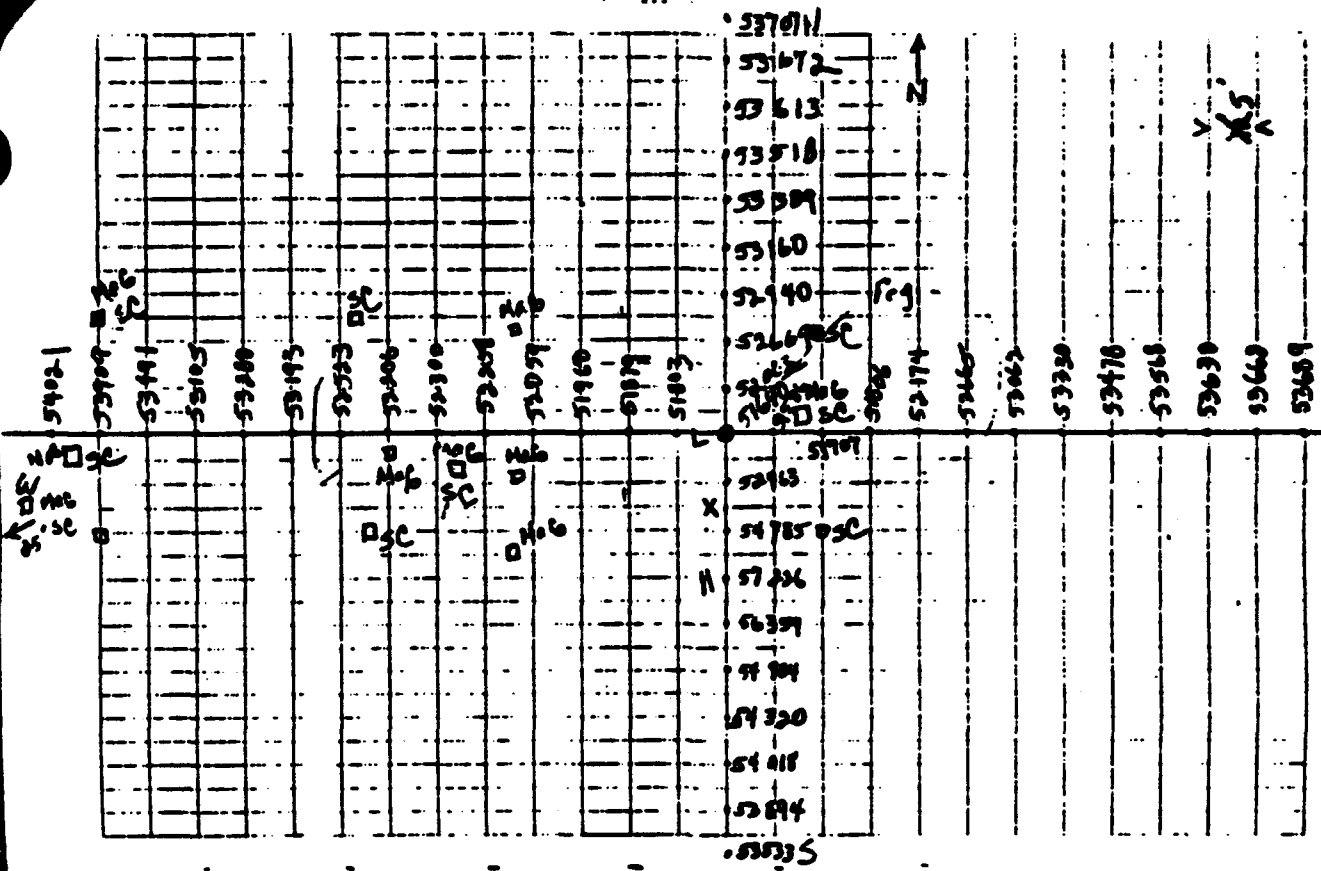
S

7-16-92

78-38

E-VI Trench

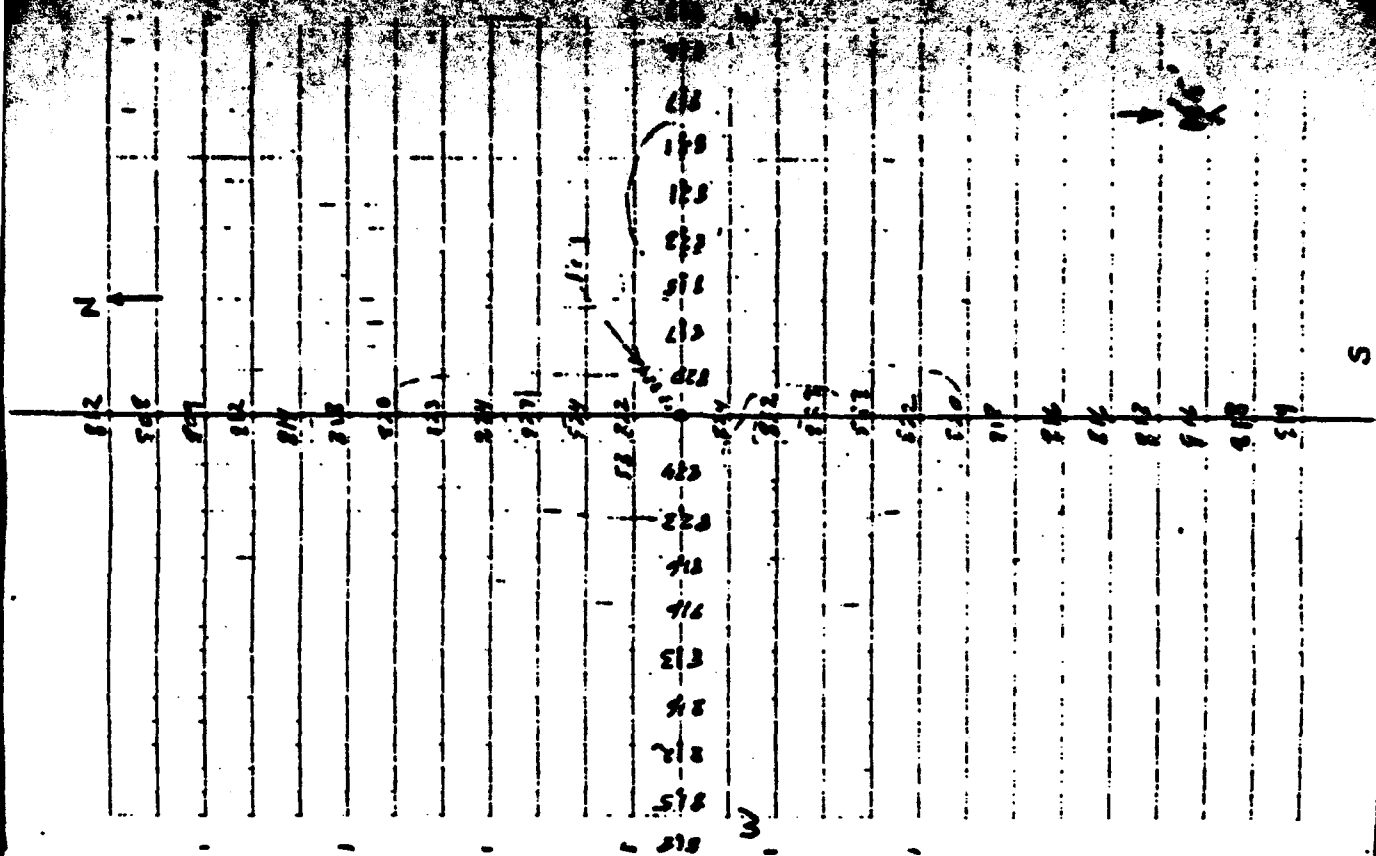
Strack SC  
Strack MAB



78-29

Low Spot

16 May	1650
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7-16-92

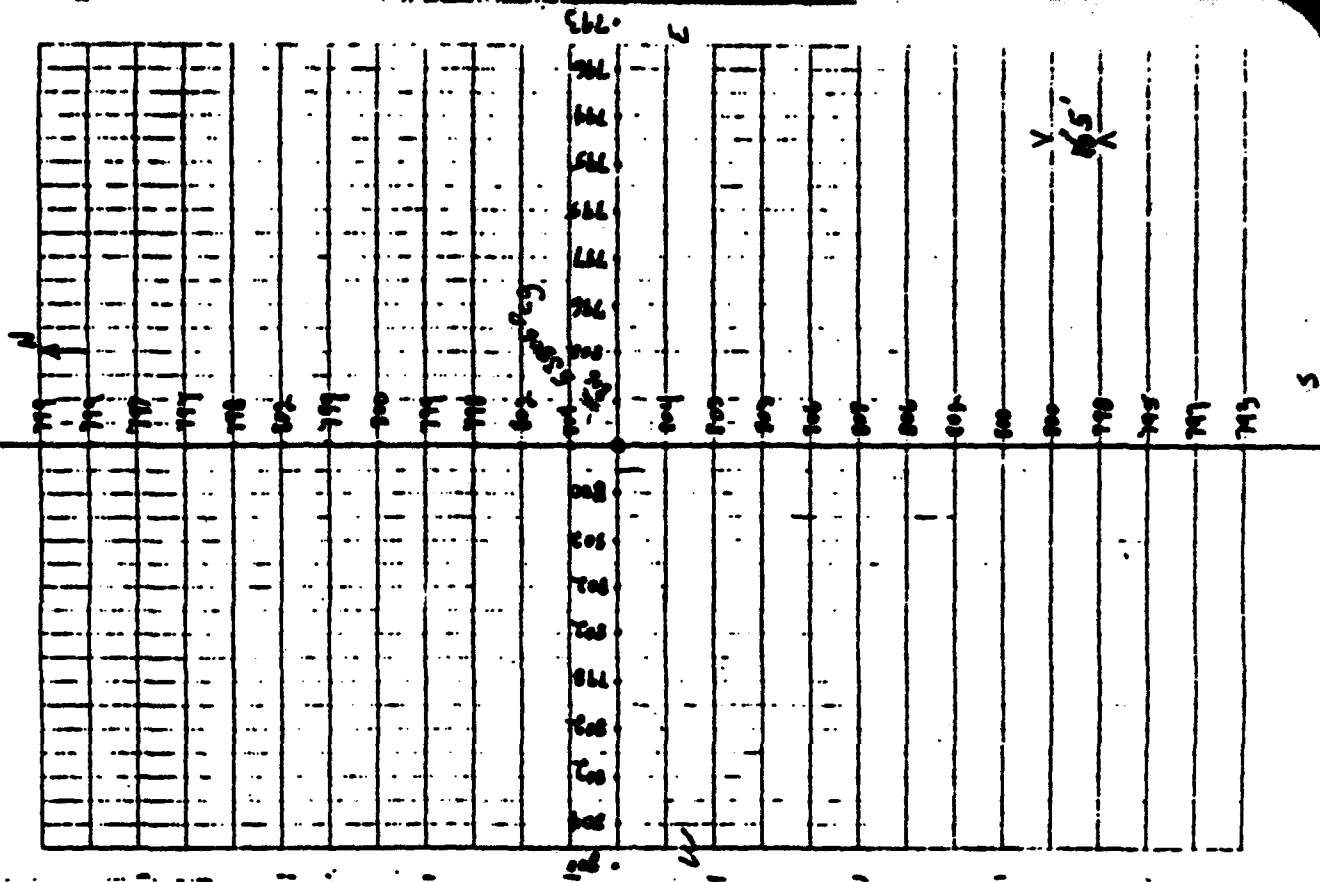
78-40

N-3 Service On Ground

Low Spd

NO SC

NO MAG



78-41

7-15-72

No. 60000 features on ground

No. 60

No. 600

200

100

0

100

200

300

400

500

600

700

800

900

1000

1100

1200

1300

1400

1500

1600

1700

1800

1900

2000

2100

2200

2300

2400

2500

2600

2700

2800

2900

3000

3100

3200

3300

3400

3500

3600

3700

3800

3900

4000

4100

4200

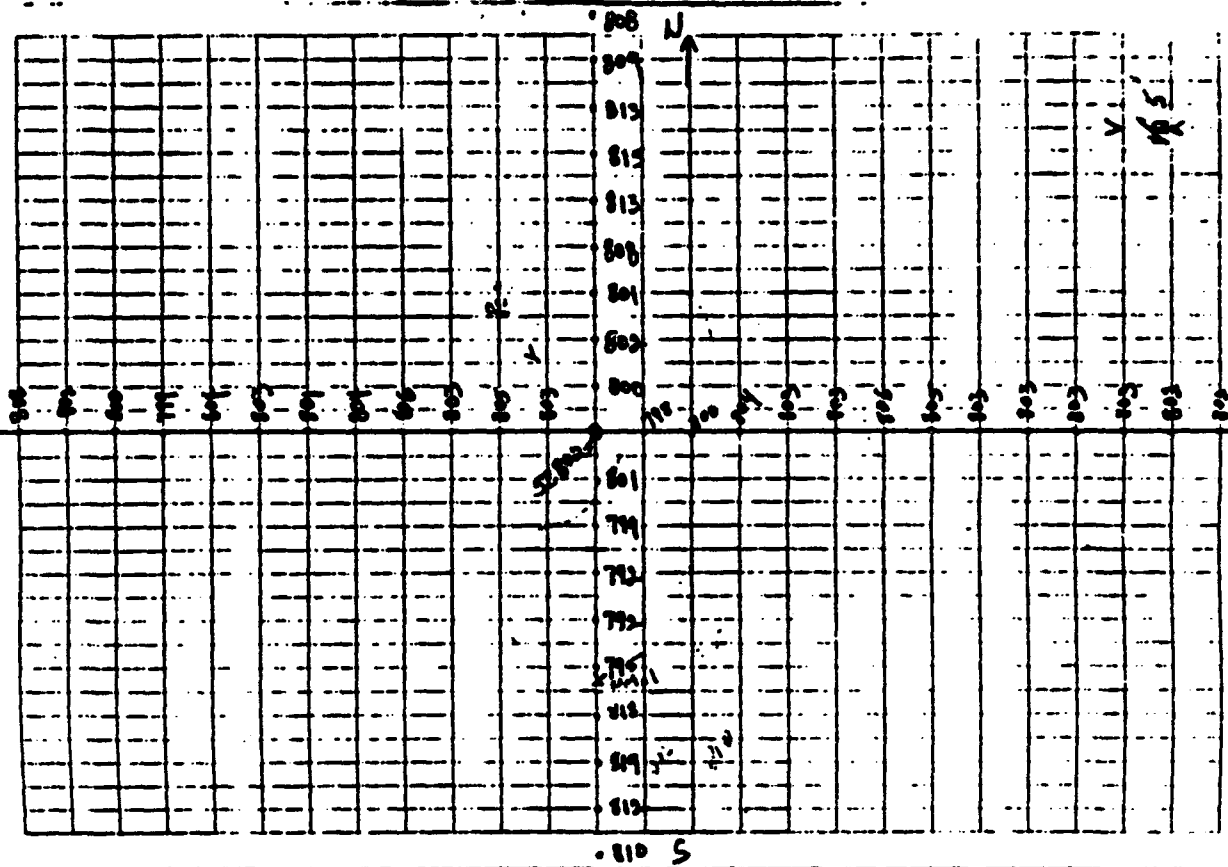
7-16-92

72-90

E-W Feature on ground  
Low Area to West

NO SC

NO MAG





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## **Appendix F**

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**MONTGOMERY WATSON**

## **APPENDIX F**

### **SUMMARY OF UXO SUPPORT SERVICES**

#### **F.1 INTRODUCTION**

**F.1.0.1.** This appendix presents the Final Project Report prepared by UXB International, Inc. (UXB) regarding the unexploded ordnance (UXO) support services provided by them during the TEAD-N RFI field activities.

**F.1.0.2.** UXB International, Inc. is a private contractor, based in Chantilly, Virginia, that provides worldwide explosive ordnance disposal services. Personnel from UXB were on site in the Open Burning/Open Detonation (OB/OD) Areas for the duration of the RFI field effort there.

#### **F.2 SUMMARY OF UXB SERVICES**

**F.2.0.1.** UXB International provided the following services during the field investigation:

- Conducting surface visual and geophysical sweeps for UXO at all test pit excavation, drilling, and geophysical survey locations at the OB/OD Areas (SWMUs 1, 1a, 1b, 1c, 1d). This included providing personnel escort for safe ingress and egress in areas where UXO was suspected to be present.
- Providing personnel and equipment to conduct test pit excavation activities at the OB/OD Area for 125 separate pits.
- Marking and reporting any encountered UXO in a work zone. UXO was reported to the Range AED personnel for subsequent disposal.
- Conducting down-hole verification of the presence or absence of UXO at the nine deep soil boring locations at the OB/OD Area.
- Maintaining a daily Field Activity Log, which included a brief chronology of daily events, description of UXO encountered, on-site personnel, and visitors

AD-A282 574

T00ELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SNNUS

8/15

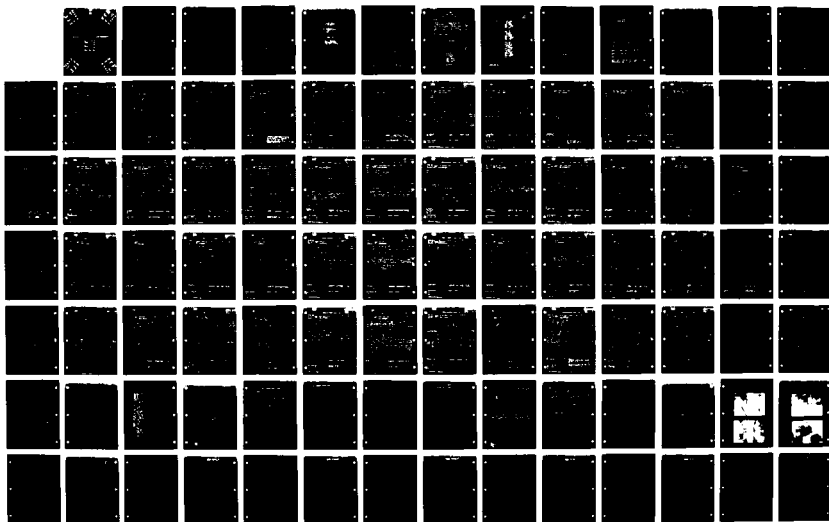
VOLUME 2 APPENDICES A - J REVISION(U) MONTGOMERY

WATSON WALNUT CREEK CA DEC 93 XA-USAEC

UNCLASSIFIED

DAAA15-90-D-0011

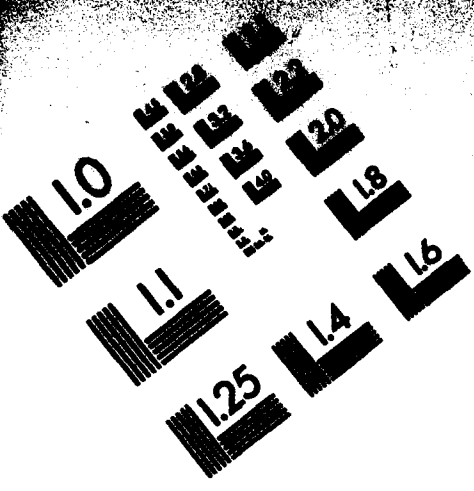
NL



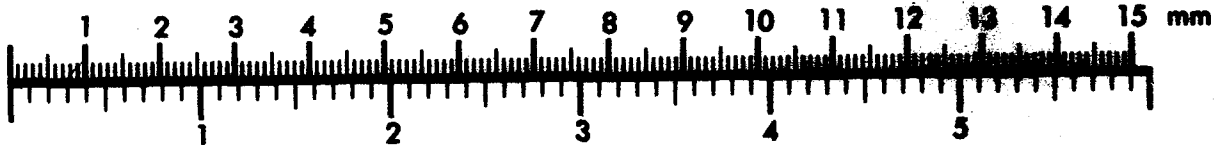


Association for Information and Image Management

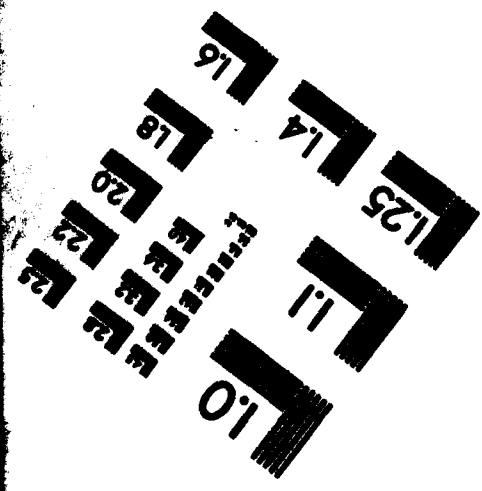
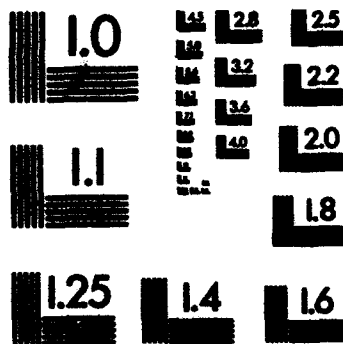
1100 Wayne Avenue, Suite 1100  
Silver Spring, Maryland 20910  
301/587-8202



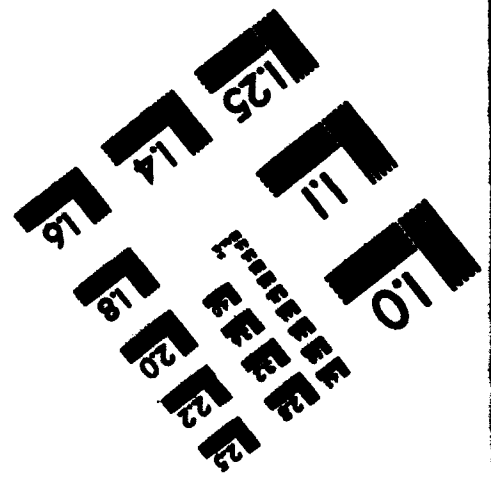
Centimeter



Inches



MANUFACTURED TO AIIM STANDARDS  
BY APPLIED IMAGE, INC.



- Preparation of a project report upon completion of field efforts.

**F.2.0.2.** The remaining portion of this appendix presents the Project Report prepared by UXB. Included are copies of all the Field Activity Daily Logs, which were completed and signed by UXB field supervisor Robert Diekmann, and an enumeration of the type and quantity of ordnance items encountered during the field work at the OB/OD Area. The report is prefaced by a cover letter from UXB Project Manager Mr. Tom Yancey, and also includes a summary of UXB activities during the project.

fuzed cluster munitions in the area. This hazard was reduced to acceptable levels by removing the top 1 to 2 feet of fragment-laden soil to allow better detection of subsurface ordnance.

This and other potential obstacles were openly discussed between JMM, USATHAMA, and UXB well in advance of any schedule impact and were resolved to the mutual satisfaction of all concerned.

  
Tom Yancey  
Project Manager

**APPENDIX A**  
**SCOPE OF WORK**

**PROJECT REPORT  
FOR DSO SERVICES  
PROVIDED BY**

**UCB INTERNATIONAL, INC.  
14800 CONFERENCE CENTER DR.  
SUITE 100  
CHANTILLY, VA. 22021  
(703) 803-8904**

**AT  
TOOLE ARMY DEPOT NORTH  
TOOLE, UTAH**

**FOR  
JAMES M. MONTGOMERY  
CONSULTING ENGINEERS  
4525 SOUTH WASHATCH BOULEVARD  
SALT LAKE CITY, UT 84124**



## **1.0 INTRODUCTION**

This project report is submitted by UXB International, Inc. to James M. Montgomery at the completion of UXO services provided at Tooele Army Depot North (TEADN), Tooele, Utah, during the period of May 26 - August 15, 1992.

### **1.1 APPENDICES**

The scope of work is included as Appendix (A) and is summarized in section 2.0. Appendix (B) is a summary of the daily work log submitted by the UXB Project Leader. Appendix (C) is a list of ordnance items found during performance of the scope of work.

## **2.0 SCOPE OF WORK**

The Scope of Work is included in this report as Appendix (A) and is summarized here. The project was divided into the following five tasks:

Task 1. Development of the UXO related sections of the project Health and Safety Plan.

Task 2. UXO services during test pit excavation and sampling in the Cluster Bomb Demolition Area.

Task 3. UXO Services during test pit excavation and sampling in the Propellant Burn Pad Area.

Task 4. Geophysical survey of transects in the Trash Burn Area. UXO Services during test pit excavation and sampling.

Task 5. Report on completion of field work.

## **3.0 PERFORMANCE OF FIELD WORK**

All UXO Services have been completed at TEADN with no job related accidents or incidents having occurred. UXB Project Leader was Site Safety Officer for UXO hazards and conducted daily tailgate safety meetings.

During the excavation of 121 test pits and performance of geophysical surveys associated with sampling and ground penetration radar, 192 live ordnance items and 11.9 pounds of explosives were recovered and turned over to Tooele range personnel for final disposition. Appendix C presents a list of ordnance items found.

This project was the first opportunity for UXB to support drilling operations using the percussion hammer system instead of augers. Concern over the strong vibrations produced by the rig were increased by the possibility of anti-disturbance and impact

## ATTACHMENT A

### SCOPE OF WORK

#### SECTION 1 - GENERAL REQUIREMENTS

##### 1.01 DESCRIPTION OF WORK

- (a) The work consists of furnishing all materials, labor, equipment, tools, transportation, and services for conducting unexploded ordnance surveys (UXO) at the Toccole Army Depot, North Area (N TEAD) located in Toccole, Utah. The work is to be performed at one site within N TEAD known as the Open Burning/Open Detonation Area, which is referred to as Solid Waste Management Unit (SWMU) Number 1. Work at SWMU #1 includes providing site clearance at four separate areas for: site inspections, borehole drilling and sampling, and field surveys. In addition, the work includes excavating and collecting soil samples from 142 five-foot deep test pits and 16 eight-foot deep test pits and providing site clearance for approximately six line miles of geophysical surveys.
- (b) Mobilization to and demobilization from N TEAD are to be included in the work. Only one mobilization is expected to be necessary. It is anticipated that field work will be conducted using a ten day on and four day off schedule.
- (c) A more specific presentation of the tasks included in this SOW is included in the following table:

##### SUMMARY OF TASKS REQUIRING UXO

##### SUPPORT IN SWMU #1

Area	Activities	No. of Man Days (Estimated)
Main OB/OD Area	• Site Inspection (assume one day)	1
	• Test Pit Excavations -64 5-foot deep pits -2 soil samples from each (assume 1 pit/hour)	8
	• Support for 2 100-foot deep borings (assume 1.5 days/hole)	3
	• Support for field survey (assume 1/2 day)	1/2
Cluster Bomb Demolition Area	• Site Inspection (assume 1 day)	1

Area	Activities	No. of Man Days (Estimated)
Cluster Bomb Demolition Area (continued)	<ul style="list-style-type: none"> <li>• Test Pit Excavations</li> <li>-64 5-foot deep pits</li> <li>-3 soil samples from each (assume 1 pit/hour)</li> <li>• Support for 2 100-foot deep borings (assume 1.5 days/boring)</li> <li>• Support field survey (assume 1/2 day)</li> </ul>	 8 3 1/2
Propellant Burn Pad	<ul style="list-style-type: none"> <li>• Site Inspection (assume 1 day)</li> <li>• Test Pit Excavations</li> <li>-6 5-foot deep pits</li> <li>-2 soil samples from each pit (assume 1 pit/hour)</li> <li>• Support for 2 100-foot deep borings (assume 1.5 days/hoie)</li> <li>• Support for Field Survey (assume 1/2 day)</li> </ul>	 1  1 3 1/2
Trash Burn Pits	<ul style="list-style-type: none"> <li>• Support for Geophysical Survey</li> <li>-Six line miles (assume 2,000'/day)</li> <li>• Test Pit Excavations (in old burn pits)</li> <li>-16 8-foot deep pits</li> <li>-2 soil samples from each (assume 3 hours/TP)</li> <li>• Test Pit Excavations</li> <li>-8 5-foot deep pits</li> <li>-2 soil samples from each (assume 1 TP/hour)</li> <li>• Support for 2 100-foot deep borings (assume 1.5 days/hoie)</li> <li>• Support for Field Survey (assume 1/2 day)</li> </ul>	 16  5  1 3 <u>1</u>
TOTAL		58.5

**Notes:**

• Assume 10-hour days

Soil samples will be collected at a rate of two per test pit and seven samples per borehole.

It is expected that the JMM site geologist will collect most of the soil samples but subcontract personnel may collect samples in some hazardous areas.

- (d) The Subcontractor shall also be asked to provide pertinent information to be incorporated in the project Health and Safety Plan (HSP) and to review the plan as it is developed. This effort is expected to be limited to two to three days of review by the subcontractor.
- (e) Preliminary results of the UXO surveys are to be furnished at the time the surveys are performed.
- (f) A final report presenting the results of all UXO surveys is to be completed within 30 days of the completion of UXO field operations. The final report shall include the location, depth and nature of any UXO or munitions debris and the date on which it was identified. The final report preparation is expected to be limited to two or three days effort by the subcontractor.

#### **1.02 PERSONNEL AND EQUIPMENT**

- (a) UXB shall supply capable and experienced personnel, suitable analytical equipment, and necessary support equipment to perform this work. UXB shall also furnish additional information as per the Experience and Equipment Form as requested by Engineer.
- (b) A backhoe and steam cleaner will be required to perform the excavations at SWMU #1.
- (c) All personnel shall be required to utilize EPA Level D protective gear. Safety equipment and protective gear will be the responsibility of UXB International, Inc., and will not be supplied by JMM.
- (d) UXB shall have Level C protective gear on-site for all members of the crew. Atmospheric monitoring by the Engineer will be used as the criteria to upgrade the level of protection from Level D to Level C.

#### **1.03 ACCESS TO THE JOB SITE**

- (a) The owner will arrange for right-of-way to the work sites. However, UXB will be required to demonstrate proof of insurance for all vehicles and show current vehicle registration to obtain access to the base. Vehicles will be checked by N TEAD personnel and fire extinguishers in the vehicle are required for access to areas of the depot. All UXB personnel will submit the following information at least one week prior to mobilization:

- (1) Full Name
- (2) Date of Birth
- (3) Birthplace
- (4) Social Security Number

#### **1.04 COMMUNICATIONS REGARDING THE WORK**

- (a) Communications regarding the work covered by these Contract Documents shall be addressed to the Engineer:

Mr. David Shank  
James M. Montgomery, Consulting Engineers, Inc.  
4525 South Wasatch, Blvd., Suite 200  
Salt Lake City, Utah 84124  
(801) 272-1900

#### **1.05 COMPLETION OF WORK**

- (a) JMM will give UXB Notice-to-Proceed only after receipt by JMM from UXB of the executed Contract and verification of all required insurance. The Notice-to-Proceed will include a mutually agreeable start date for the project. The project schedule and start date are currently being developed.
- (b) UXB shall provide JMM with the executed Contract, their intended work schedule, which shall include details such as specific equipment to be used, number and size of work crews, and projected start date.

#### **1.06 PAYMENT**

- (a) Payment shall be based on the percent of subcontractor tasks complete and will not exceed the total lump sum negotiated between JMM and UXB for this task.
- (b) The subcontractor should invoice JMM monthly and payment will be made only after approval of all invoices by the JMM project manager and after receipt of payment by JMM from USATHAMA.

#### **1.07 RECORDS**

- (a) At the end of each day, UXB shall submit a daily progress report that will include survey results and locations of anomalies. All daily progress reports will be submitted on a form that will be signed by the JMM field operations leader or other designated representative.
- (b) Instruments shall be calibrated daily. Calibration forms shall be submitted to the Field Operations Leader at the end of each day.

#### **1.08 COORDINATION OF WORK**

- (a) Not less than one week prior to mobilization, UXB and JMM will have a telephone conference to discuss the details of the project. This conference call is intended to address specific topics which may not be fully clarified in this Scope of Work. UXB's field supervisor assigned to the project will participate in the conference call along with the JMM Field Operations Leader.

**ATTACHMENT A**  
**TECHNICAL PROVISIONS**  
**SECTION 2 - MATERIALS**

**2.01 GENERAL**

- (a) UXB shall furnish all materials, supplies, equipment, and labor necessary to complete the required work as described in Section 1.

**2.02 TEST PIT EXCAVATIONS**

- (a) UXB shall supply a backhoe and steam cleaner to decontaminate the backhoe.
- (b) Plastic sheeting used to line the excavations prior to backfilling will be supplied by UXB.

**APPENDIX B**  
**DAILY WORK LOG**

UXB

# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	5	28	92
	NO.			
	SHEET	1	OF	1

PROJECT NAME	DOELLE Army Depot North	PROJECT NO.	508.01
FIELD ACTIVITY SUBJECT: Field Investigation			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:			
0630 Depart Quarters for Job Site, Fill up Steam Cleaner with Water.			
0710 arrived Job Site. Checked in with Range Personnel. Parked Steam Cleaner at Decon Pad. Located and Staked ordnance items found 5-27 for disposal today by TEAD.			
0800 Tailgate Safety. Start marking Cluster Bomb area for Pits (Blu-3 M-582)			
0930-1030 Delay for Powder Burn (Range operation)			
1030- Resumed Staking (Blu 3, 2.75 W/H, 40mm Projectile, 90mm Projectile)			
1330-1435 lunch Break. 20 mm, 40mm projectile. And delay due to Burn operation.			
1435 Depart with Survey Team escort (Bob) and Stake Remaining Trench Areas (Tom)			
1630 moved Survey outside of Demo area (Escort)			
1745 Departed Job site. Gate locked by guards. Was able to find an alternate Route. (Lucky)			
1830 arrived Quarters.			
<p>Ordinance Items (Live)</p> <p>2 ea Blu-3</p> <p>1 ea M 582 Fuze</p> <p>1 ea 2.75 warhead</p> <p>2 ea 40 mm Projectile</p> <p>1 ea 90 mm Projectile</p>			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.	
Range Safety		<p>Pathways are Surface Cleared. Trench sides are Surface Cleared. Traffic cones are used to mark boundaries of cleared area.</p> <p>Very difficult to stake.</p>	
WEATHER CONDITIONS: 70° Clear, Windy, Cool		IMPORTANT TELEPHONE CALLS:	



# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	5	20	2
	NO.			
	SHEET	1	OF	1

PROJECT NAME	<i>Tooe Army Depot North SAM</i>	PROJECT NO.	<i>508.01</i>
FIELD ACTIVITY SUBJECT: <i>Field Investigation</i>			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:			
<p>0630 Departed Quarters for 66 site</p> <p>0640 - 0700 awaiting guard to open gates then to 0800</p> <p>0730 - Tail gun Safety - Clean bucket started digging test pits. Provided escort for survey team</p> <p>11:30 - 1200 Lunch completed @ test pits. Rain Delay &amp; lightning.</p> <p>13:00 Start to dig test pits.</p> <p>13:30 Put on hold on test pits until tomorrow. escort survey crew (Bob) team help with locating test pits on maps.</p> <p>15:15 - Complete with survey crew. Depart for office trailer. Contact security to lock gates.</p> <p>15:40 - helping locate test pits, on to maps and catching up on Paper work.</p> <p>17:15 - Departed office for Quarters</p> <p>17:30 - Complete for day.</p> <p>No live ordnance items located. all pits contained burn residue or ordnance residue. some Scrap. bomb &amp; Artillery Fuzes, Nose/tail bomb Plugs, Artillery Fuzes. Shell Casings.</p>			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.	
<i>Larry Fishes</i>			
WEATHER CONDITIONS: 70's		IMPORTANT TELEPHONE CALLS:	
<i>Cloudy - cool - light Rain, AM</i>			
<i>PM Lightning &amp; Rain</i>			

UXB

DAILY LOG	DATE	5	30	92
	NO.			
	SHEET	/	OF	/

# FIELD ACTIVITY DAILY LOG

PROJECT NAME	Tooele Army Depot North, JMM			PROJECT NO.	508.01
FIELD ACTIVITY SUBJECT: Field Investigation					
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:					
<p>0630 Departed Quarters for Job site</p> <p>0650 arrived Job site</p> <p>0755 tail gate Safety Mtg. at site office</p> <p>0805 Departed for trench operation (west side) and started digging Test Pit.</p> <p>1245-1315 lunch Two test pits completed and set up on 3rd.</p> <p>1315 Resumed digging Test Pits</p> <p>1715 Completed 3 test pits and deconed burial for Tomorrow</p> <p>No ordnance items located. Went to Job site office. Trailer</p> <p>1800- departed job site for Quarters</p> <p>1830 - Complete for days operations</p> <p>no live ordnance items located in any of the Test Pits</p> <p>only scrap, burn debris, burnt ordnance debris.</p>					
VISITORS ON SITE:			CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.		
Larry Fisher					
WEATHER CONDITIONS: 80°			IMPORTANT TELEPHONE CALLS:		
Clear to Partly Cloudy - Cool - light wind					
PERSONNEL ON SITE: D...					

# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	5	31	92
	NO.			
	SHEET	1	0	

PROJECT NAME	Toole Army Depot North JMM			PROJECT NO.	508.01
FIELD ACTIVITY SUBJECT: Field Investigation					
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:					
<p>0630 Departed Quarters for Job Site</p> <p>0650 arrived Job site office trailer</p> <p>0745 - tail gate safety meeting go over maps discuss test pit areas go to test pit area.</p> <p>1230-1300 Lunch two test pits complete in morning</p> <p>1300 - Resumed digging test pits</p> <p>1745 - Completed test pits for day. 3 complete in PM. Departed for Job site office trailer.</p> <p>1810 - departed Job site office trailer</p> <p>1830 - Complete for day.</p> <p>no live ordnance items located. all pit contained some burn residue or burnt ordnance debris.</p> <p>3 small pieces (3g.) of TNT on surface. M110 bomb Fuzes, Artillery Fuzes, Ammunition containers,</p>					
<p>Live ordnance</p> <p>3 oz. TNT</p>					
VISITORS ON SITE:			CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.		
<p>WEATHER CONDITIONS: 80s</p> <p>Clear &amp; AM</p> <p>Cloudy &amp; Windy in PM</p>			IMPORTANT TELEPHONE CALLS:		
PERSONNEL ON SITE: Dickman... ..					

UKB

DAILY LOG	DATE	6	1	92
	NO.			
	SHEET	/	OF	/

# FIELD ACTIVITY DAILY LOG

PROJECT NAME 100th Army Depot North JMM PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

## DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0630 Departed Quarters for Job Site
- 0630 arrived Job site office trailer, loaded equipment. Awaiting Tailgate safety Mtg.
- 0720 Tail gate Safety Mtg.
- 0745 Departed site office trailer to locate test pits and start test pit digging
- 1014 Delay for Burn operation and lunch
- 1120 - Resume test pit digging. (BLU-3 Armed with Striker Plate)
- 14:46 - Delay for Burn operation and blow items we found.
- 1600 - Resumed Test Pits
- 1730 - Completed test pits for Day 4 completed deconed backhoe Pumped out decon pad onto barrels.
- 1800 - Departed Jobsite for Quarters. Dropped van off at 1830 then on to exchange Steam cleaner as the other one would not start.
- 1950 - Complete for day.  
All test pits dug to day contained bomb Fuzes, Projectile Fuzes, Fuel adapters, adapters boosters, Mech time Fuzes, Ordnance debris, and some misc debris  
live ordnance located  
1 each BLU-3  
1 each 30mm Projectile.

1111

VISITORS ON SITE: <u>Randy Fisher + 1 EPM (State)</u> <u>Dave Shank</u>	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: <u>60°</u> <u>Clear, Cool, Windy</u>	IMPORTANT TELEPHONE CALLS:
PERSONNEL ON SITE: <u>Dickmann on call + JMM</u>	

# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	6	2	92
	NO.			
	SHEET	1		

PROJECT NAME	Troop Army Depot North - IMA	PROJECT NO.	508. 01
FIELD ACTIVITY SUBJECT: Field Investigation			

### DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0630 - Departed Quarters to fill Steam Cleaner Barrel and then to Job site office trailer.
- 0710 - at Job site office trailer awaiting Safety Mtg.
- 0800 - departed office to set up decom Trailer and Prepare for Test Pit Digging.
- 1030 - delay, Burn operation
- 1125 - Resumes test pit digging.
- 1440 - delay, Burn operation and Detonation of items we Located
- 1515 - Started cleaning Test Pits of Tomorrow's operations
- 1700 - finished cleaning 2 Test Pits. Could only Partially Clear them as there is too many deep contacts will have to use Backhoe.
- 1730 - Completed operations for day. Completed 2 Test pits for V. No live ordnance in pits. encountered 90 mm shell casing, 37mm shell casing, Frag sleeves, and Misc ordnance debris and Numerous Small Arms all Burnt. the pits also contained a lot of Scrap Debris.

Live ordnance located

2 of TNT

2 ea 20 mm

1 ea Antiveg Fuze (Partial)

1 ea TNT Supplemental Charge (Partial)

1 ea 40MM Proj.

11

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS. Received Radio from Rums for contact with them during burning operations. at 130 during burning operations they will not open until they receive notification.
WEATHER CONDITIONS: 90° Clear Cool	IMPORTANT TELEPHONE CALLS: Approved this will save us time. Tom Yancy about use of notes Dave Shanks about UXB clearance

PERSONNEL ON SITE: Dick... 010000 1 110001

UXB

# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	6	3	92
	NO.			
	SHEET	1	OF	1

PROJECT NAME Tooele Army Depot North JMM PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

## DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0630 - departed Quarters for Job Site
- 0650 - Arrived Job Site Trailer Awaiting Safety Mtg.
- 0750 - Went to trench site to prepare site for trenching.
- 0951 - Test Pit contained 30 cal, 38 cal, Brass Fuzes, 75 mm M44, Ammo Container Residue, Misc Items. Burn Pit area.
- 1116 - Test Pit contained Nail, Wire + Misc Fine Metal Residue.
- 1300 - Delay Barn operation.
- 1330 - Resumed test pits digging. Pit contained Fuse Residue and Small Metal debris.
- 1500 - Started Cleaning Test Pits for tomorrow.
- 1700 - Completed. Clearing 4 areas for tomorrow. Could only Partially Clear them as to many deep contacts that require use of Back hoe. Departed for Quarters. 3 Test Pits Completed.
- 1730 - Dropped off van at Quarters then on to get fuel for Backhoe then on to pick up Water Tank Requested by JMM. they asked that I pick it up as we had been working with A local Rental Company. the Tank trailer was not ready as told it would they will deliver it tomorrow. Trailer will be for DeCon Water. Mail Personnel Security Forms to office.
- 1830 - Complete for day.

live ordnance items

1/2 D14-3  
1 20 MM  
1 40 MM  
3 02 H&E

## VISITORS ON SITE:

LARRY FISHER + 1

## CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS: 80°  
Clear, Cool.

## IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: DIERMANN, O'NEILL + JMM

# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	4	92
	NO.		
	SHEET	OF	

PROJECT NAME	Toledo Army Depot North JAMA		
PROJECT NO.	508 21		
FIELD ACTIVITY SUBJECT: Field Investigation			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:			
0630 - Depart Quarters for Job Site			
0650 - Arrived Job site consisting Tailgate Safety MFG			
0745 - arrived trench site / Prepare for test pit digging			
0900 - Test Pit contained some metal debris could not tell what all the Alum/Brass was totally deteriorated. Very few pieces of fuzes.			
1045 - Test Pit contained a few Fuzes and small of very small FRAG. Nothing that could be recognized.			
1130-1200 - Lunch.			
1300 - Resumed operations.			
1328 - Test pit contained a layer of Burn Residue (see ordinance) and Metal Fragments.			
1550 - Test Pit contained Burned Residue from 155 mm. And smaller. Appeared to be a pit fire burning candle/illum rounds. No live ordinance. 4 Test Pits Completed			
1615 - Started cleaning test pits for Tuesday. Removed all equipment from Range Area for Break. Finished Cleaning/Painting 4 new test pit areas for Tues.			
1700 - unloaded Equipment at Trailer and departed Site.			
1730 - Complete for day. No ordinance (live) located today.			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS: Tool Box Rental did not deliver water tank trailer. Will pick up Monday. JAMA asked MC to take over Tailgate Safety & Site Safety.	
WEATHER CONDITIONS: 80% Clear/Cloudy		IMPORTANT TELEPHONE CALLS:	
PERSONNEL ON SITE: DICKMANN, O'NEILL & JAMA			

U.S.

# FIELD ACTIVITY DAILY LOG

DATE	6	8	1972
	NO.		
	SHEET	1	OF 1

PROJECT NAME	Tonale Army Depot North JMM	PROJECT NO.	508.01
FIELD ACTIVITY SUBJECT: Field Investigation			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:			
<p>0630 - Departed Quarters for Job Site</p> <p>0650 - arrived Job Site. Positioned Tank Trailer, Backhoe and Steiner</p> <p>Clearing trail on Range.</p> <p>0730 - Assembly JMM</p> <p>0745 - Conducted Safety Mtg</p> <p>0800 - departed site trailer to decon backhoe and prepare area for digging</p> <p>0940 - Pit contained 30 gal open drum 10s, 15s and small Flame Candle Residue, 10s smoke containers. 6" + 8" Pipe Pieces, hold Rings of some sort, Banding Material. No live ordnance.</p> <p>1125 - Pit contained No Ordnance Residue that could be recognized. Some Wood - steel tubing - Copper Residue.</p> <p>1145 - 1215 Lunch</p> <p>1300 - Pit contained Banding Material, 3.5" Containers, Misc Debris. No live ordnance</p> <p>1544 - Pit contained Banding Material, 3.5" Containers, Misc Debris. No live ordnance</p> <p>1600 - Started Clearing Test Pit areas for tomorrow</p> <p>1700 - Completed Clearing 4 test pit sites and unloaded Equipment at Site Trailer. departed for main office trailer</p> <p>1720 - Arrived office trailer. informed Deb that we need Approval to Renew Badges + Vehicle pass. Also to obtain Copies of all Photos Requested last week None available yet Discussed Schedule</p> <p>1800 - Complete for day 4 Pits Complete</p> <p>Live ordnance located</p> <p>2 - BU 3 Fuzes</p> <p>6 - 20 MM</p>			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.	
Deb JMM			
WEATHER CONDITIONS:		IMPORTANT TELEPHONE CALLS:	
Clear. Hot Light Rain in PM			
PERSONNEL ON SITE: DeMunn, ONYLL + JMM			



# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	6	10	92
	NO.			
	SHEET	1	OF	

PROJECT NAME	Teale Army Depot North Jam	PROJECT NO.	508.01
FIELD ACTIVITY SUBJECT: Field Investigation			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:			
0630 - Departed Quarters for Job site			
0650 - arrived Job site. Trailer, loaded equipment and Ammunition			
0730 - departed for Test Pit Area. Prep for digging operations			
0855 - Trench excavation. Small Resistance. And aluminum Residue across the line			
ordnance NO R any ordnance Residue			
1240 - Pit contained nothing. Delay prior to this test Pit. had to relocate test Pit and had visitors on site			
1300-1330 - Lunch			
1545 - Pit contained nothing. dug long Pit trying to locate trench			
1600 - Started marking off more test Pits, then cleaning Test Pits and area around them			
1800 - Completed cleaning test Pit area. Unloaded Equipment in Site Trailer. departed for Quarters			
1900 - Complete for day. 3 Pits complete			
Live ordnance located			
6. 02 H8			
1. 40 MM			
12 20 MM			
1 VT Fuze			
1 Fuzed 40mm mortar			
VISITORS ON SITE: MAY Gillon (Co) Larry Fisher + 1 Roy		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.	
WEATHER CONDITIONS: Cloudy. hot. Some light Rain		IMPORTANT TELEPHONE CALLS:	
PERSONNEL ON SITE: Dickman, May Gill + 1 MM			

UXB

# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	6	11	92
	NO.			
	SHEET	1	OF	1

PROJECT NAME	Tooele Army Depot North JMM		PROJECT NO.	508.01
FIELD ACTIVITY SUBJECT: Field Investigation				
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:				
<p>0615 Departed Quarters For Badge office to Renew badges (Entry) and Vehicle PASS.</p> <p>0650- Arrived Job site, loaded Equipment, Awaiting JMM, Conducted Safety Mtg.</p> <p>0735- departed for test Pits, Prepare Site</p> <p>0915- Test pit contained BURN (Metal slag) Residue. 1 M48 grenade found while excavating.</p> <p>10:05 Delay Building operation Plus visitors</p> <p>11:00 Resumed digging operations. Pit contained NO ordnance items. Pit contained BURN Residue.</p> <p>13:00 Pit contained Some Burn Residue NO ordnance</p> <p>14:40 Pit contained Some Metal Fragments, almost Nothing. NO ordnance</p> <p>14:45 Took backhoe to Job site Office for Mechanic to work on hydraulic hose leak</p> <p>14:50 Started clearing test Pit Sites for Next day.</p> <p>16:45 Completed Clearing. Unloaded Equipment in Trailer.</p> <p>17:00: departed Job site. Part removed from backhoe for repair</p> <p>17:30: Completed all operations for the day 4 pits Completed.</p>				
<p>Live ordnance items located.</p> <ul style="list-style-type: none"> <li>1 - Unknown Item</li> <li>1 - M48 Base Fuse</li> <li>4 - 20 mm</li> <li>1 - Fuse Base Cap</li> <li>1 - M48 Grenade</li> </ul>				
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.		
<p>Mary Ellen Koppert</p> <p>Deb Davis</p>				
WEATHER CONDITIONS:		IMPORTANT TELEPHONE CALLS:		
<p>Cloudy - Windy - Hot</p>		<p>Mary Ellen Koppert Was very Messed with everything she had seen.</p>		
PERSONNEL ON SITE: Dickman, ONI, L + JMM				

# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	6	12	92
	NO.			
	SHEET	1	0	

PROJECT NAME Tosco Army Depot North SAM PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

### DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0630 - Departed Quarters for Job Site
- 0650 - arrived Job Site Trailer, awaiting Juan and Backhoe Mechanic.
- 0745 - Son checked Safety UTA.
- 0825 - Mechanic finished with backhoe. departed for test pit areas to dig down + start excavations.
- 0945 - Pit contained some metal residue, Ash, (small) Lul. Frag along. Backhoe started leaking Hyd. Fluid again. Contacted Rental Co. They have a New Part coming in today. Will replace in PM when we shut down.
- 1110 - Pit contained some metal frag. Tank hatch cover, 50 cal Ball Bullet Residue layers, etc.
- 1130-1200 Lunch
- 1220 - Pit contains Bullet (sh layer) layer in Soil only. No other notable residue.
- 1745 Pit contained metal debris, some bullet residue. Backhoe taken to Job Site Trailer for maintenance. Started clearing test pit areas and marking more test pit areas.
- 1755 Completed clearing and marking test pit areas. Unloaded equipment in site trailer. Assisted Backhoe Mechanic in fixing Backhoe.
- got locked in area.
- 1800 Complete operations for day. 4 test pits

Live  
ORDNANCE located  
3 - BLU-5 Fuzes  
1 - 20mm

### VISITORS ON SITE:

### CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

### WEATHER CONDITIONS:

Clear - Windy - hot

### IMPORTANT TELEPHONE CALLS:

Informed Tom about future date on So  
bering + geophysical surveys.

PERSONNEL ON SITE: Dietermann, O'Neill + Juma

02B

DAILY LOG	DATE	6	15	75
	NO.			
	SHEET	1	OF	1

# FIELD ACTIVITY DAILY LOG

PROJECT NAME	Tooele Army Depot North		JMM	PROJECT NO.	508.01
FIELD ACTIVITY SUBJECT: Field Investigation					
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:					
0630 - Departed Quarters for Job site					
0650 - Arrived Site Trailer awaiting JMM. Loaded Equipment on Trailer					
0745 - conducted Safety Mtg. Departed Site Trailer to test pit area. Deon Bucher and prepare for examination.					
0930 - Pit Contained no ordnance, Some Frag.					
1100 - Pit Contained Buam Residue. Some Metal Slag. No ordnance then Residue					
1130 - Res Lunch					
1305 - Pit contained Nothing. 2 pieces of Frag. No Buam Residue					
1530 - Pit contained Nothing. No Residue					
Started clearing test Pit areas for tomorrow. had to relocate some of the Pit areas.					
1645 - Completed clearing Pit areas. Unloaded Equipment in Site Trailer. Hooked up Steam Cleaver to take to well and G.I. Water tank.					
1720 - Water tank filled. Taken to office trailer for night. Discussed test pit schedule.					
1745 - departed for Quarters					
1800 - Completed for day. 4 test pits Completed					
Live Ordinance located.					
1 DZ HE					
2 BLU-3 Fuzes					
VISITORS ON SITE:			CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.		
Larry Fisher					
WEATHER CONDITIONS:			IMPORTANT TELEPHONE CALLS:		
Partly Cloudy - Cool.					
PERSONNEL ON SITE: <del>Dickman</del> , ONELL + JMM					

# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	6	14	92
	NO.			
	SHEET		0	

PROJECT NAME Tooele Army Depot North JMM PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

### DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 Departed Quarters for Job Site. Picked up Water Tank/Steam Cleaner at Officer's trailer and delivered to Job Site.

0720 - Arrived Job Site & Trailer. Loaded Equipment. Awaiting JMM.

0735 - Safety Briefing conducted. Went to prepare test pit.

Excavations

0925 - Pit contained Burn Residue, Metal Slag, adapter Booster. No live ordnance items.

1055 - Pit contained Burn Residue, Glass/Plastic Slag. No ordnance items.

1115 - 1155 Lunch then resumed excavations.

1300 Pit contained Burn Residue, Glass/Plastic Slag. No ordnance items.

1400 Pit contained nothing.

15100 Pit contained nothing. Dug out backhoe.

1530 Started clearing test pit areas for tomorrow.

1630 Stopped clearing due to rain. Completed clearing (Surface on 2 sites) marked boundaries on 2 more sites.

Moved Equipment in Site Trailer.

1700 Completed operations for day. 5 Pits complete.

Live Ordnance located.

2 40 mm

3 20 mm

1 VT Fuse

### VISITORS ON SITE:

Deb Drain

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

### WEATHER CONDITIONS:

Cloudy - Cool

### IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE Diekmann, OUELL + JMM

INITIALS: (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12)

DATE: / /

UXB

# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	6/15/92		
	NO.			
	SHEET	1 OF 1		

PROJECT NAME	Toole Army Depot North			PROJECT NO.	508.01
FIELD ACTIVITY SUBJECT:	Field Investigation				
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:					
0630 - Departed Quarters for Job site. <del>From</del>					
0650 - Arrived Job site. Loaded Equipment. Assembling Jam					
0740 - Conducted Safety Mtg. departed to test pit area to perform Site					
0915 - Pit contained Burn debris, metal frag, wood, aluminum debris					
1025 - 1055 Delay for Burn operation					
1120 - Flat Tire on back hoe. Take to get fixed. Pit contained					
Burn residue, metal frag					
1235 - Flat repaired. resume Excavation					
1445 - Pit contained large metal items, tables, tank, shop fixtures, etc ordnance					
items					
1500 - Started cleaning test pit Site for tomorrow.					
1730 - Completed cleaning 4 test pit area. unloaded Equipment					
in Site Trailer. departed for Quarters. 3 Test Pits Complete					
1800 - operations Complete for day.					
Live ordnance located					
1 - M 42					
1 - VT Fuze					
3 - M 42					
1 Base fuze					
1 40 mm					
4 - 20 mm					
2 - BLU-7 Fuze					
VISITORS ON SITE:			CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.		
OTHER CONDITIONS: Am 40's			IMPORTANT TELEPHONE CALLS:		
Cold - Cloudy. Rain, snow in			Informed TOM Y. about schedule runs		
high altitudes around Job Site			into Aug.		
Saw 2 or 3 mountain peaks					
PERSONNEL ON SITE: DUEMAN, O'NEILL + JMM					

# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	6	16	92
	NO.			
	SHEET	1	OF	

PROJECT NAME Tooele Dam Report North JMM PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0630 - Departed Quarters for Job site.
- 0650 - Arrived Job site. Loaded Equipment. Awaiting JMM.
- 0735 - Conducted Outgate Safety Mtg. on hold for operations due to Rain
- 0815 - Started excavation preparation. Briefed Visitors (Safety site) on the Site and operations to be conducted. Already conducted
- 1130 - Pit contained large metal items, large portions of G.P. 100 bombs, Art Shell fragments, woods. No advance items. Moved water tank. Tumbled out of Site for Detonation.
- 1145 - 1215 Lunch.
- 1435 - Pit contained a bag of Safety Fuse (Blowhole) down hole
- 1515 - Started cleaning test Pit area for next day.
- 1530 - 1630 Delay for Blasting operations
- 1630 - Resumed cleaning test pits
- 1800 - Completed cleaning test Pit area for next day. Unloaded Equipment in Site Trailer. Departed Job site
- 1830 - Complete for day. 2 Pits Completed.

Note: Explained to Dianna how we were accomplishing, Cleaning techniques, excavation, Safety in and around exclusion area and the Range.

Live ordnance  
1 oz NG  
1 Fuse Base Cap

VISITORS ON SITE: Larry Fisher +1 Dianna Feinreich	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS. Change in exclusion zone at test Pit area due to steep slopes. only one entry/Exit area. and that being the only area cleared. discussed it with JMM they ok'd it.
--	--

WEATHER CONDITIONS: Cloudy - Rain - Snow in hills - cool	IMPORTANT TELEPHONE CALLS: Informed Tool Box Rental of need for Equipment for a longer time.
---	---

PERSONNEL ON SITE: DIKEMAN, ONTILL, & JMM

UAB

# FIELD ACTIVITY DAILY LOG

DATE	6 / 17 / 93	
	NO.	
	SHEET	1 OF 1

PROJECT NAME Tooele Army Depot North Jmm PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0630 - Departed quarters for Job Site.
- 0650 - Arrived Job site. Loaded equipment. Awaiting Jmm.
- 0745 - Conducted tailgate Safety Meeting. Departed for test pit area.  
Tom helped stake out more Test Pit areas. and I escorted Dick  
Tom to Teach Pit Burn area for Survey.
- 1000 - Resumed Test Pit Excavations
- 1030 - 1115 - Delay Burn operation.
- 1215 - Pit contained small pieces of Frog. No ordnance items.
- 1400 - Pit contained pieces of Frog + Detonation evidence. are ordnance items.
- 1430 - Digging done in large area of pit. Burns + Detonations.
- 1530 - Pit contained pieces of Frog. No ordnance items.
- 1545 - Started clearing Test Pit area for next day operations.
- 1720 - Completed clearing Test Pit area. Unload Equipment into  
pile. Started. Departed for Office Trailer.
- 1730 - Locked in area. Called for guards.
- 1800 - Operations Completed for day.
- Note: - Many visitors today. Dinner (Health + Safety) Planned with all  
operations. Conducted separate Tailgate safety Mtg for visitors.

live ordnance items

- 1 Fuze Cup
- 9 oz HE
- 14 80 MM

1/1

VISITORS ON SITE: Dickson + 1 NTRD  
Dick Fox + 1  
Deb Danin  
Steve Green  
Steve GPO  
Steve (Environmental)  
Dianne F (H+S)

CHANGES FROM PLANS AND SPECIFICATIONS, AND  
OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:  
- Less cool in air  
Cloudy - Warm in PM

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickson, O'Neil + Jmm



# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	6	18	92
	NO.			
	SHEET	1		

PROJECT NAME Tooele Army Depot North JMW

PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

### DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630: departed Quarters for job site  
 0650: Arrived job site, loaded Equipment. awaiting JMW.  
 0745 - Conducted Tail gate Safety Mtg. departed Site Trailer for Test Area  
 0905 - Pit contained a lot of Frag. No ordnance items  
 1025 - Pit contained Burn residue, Metal Scrap. No ordnance items.  
 Worked on Busher Mechanic did not tighten a fitting & we had a hydraulic  
 leak  
 1130-1200 lunch.  
 1200 - Resumed Test Pit operation  
 1330 - Pit contained a Part of a Fuz (see) Metal Frag. No ordnance.  
 1420 - Delayed to burn operation  
 1500 - Resumed Test Pit.  
 1630 - Pit contained Frag, Burn residue, No ordnance.  
 1545 - Started cleaning Test Pit areas. Core Area + Frag. 4 pit complete  
 1700 - Completed cleaning Test P.V. areas, unloaded all Equipment van  
 Site Trailer departed.  
 1730 - complete for day.

Live ordnance Located.

A-02. H6

1- BLU-3

1- BLU-3 Fuz

2- 20MM

#### VISITORS ON SITE:

Deb Drain JMW  
 Band (environmental) +  
 2 State EPA

#### CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

#### WEATHER CONDITIONS:

Clear - Warm

#### IMPORTANT TELEPHONE CALLS:

Informal Tom Y. about Diagram (H+S) re

PERSONNEL ON SITE: Dickman, O'Neill, + JMW

**DXB**

DAILY LOG	DATE	6	23	92
	NO.			
	SHEET	1	OF	1

## FIELD ACTIVITY DAILY LOG

PROJECT NAME	Tooele Army Depot North JMM			PROJECT NO.	508.01
FIELD ACTIVITY SUBJECT:	Field Investigation				
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:					
0630 - Departed Quarters for Job site					
0650 - arrived Job site, loaded Equipment. Serviced Backhoe, awaiting Jmm					
0810 - Conducted Safet (tailgate) Mtg departed for test Pit Area.					
0940 - Pit Contained Frag, Ash, Fuze Parts, No Live ordnance					
1045 - Pit Contained Frag, 90 mm ill. 1/2 4lb. Thermitic bomb, banding.					
1100 - 1130 Lunch					
13:10. Pit contained a burn layer in ground nothing e/sc.					
14:28 - Pit contained a thin Burn Layer on Top Nothing else					
1500. Started Clearing Test Pit areas for Next day.					
1645: Completed test Pit Clearing, unloaded equipment in site Trailer. departed for office trailer to discuss future test pit locations and work schedule.					
1730 Completed operations for day. 4 Test Pits Complete.					
Live ordnance Located.					
2 lbs HE					
1- 20 mm					
1- Blu-3 Fuze					
1- 1/2 4 lb. Thermitic bomb (no fuze)					
VISITORS ON SITE:			CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.		
WEATHER CONDITIONS: Clear, Warm AM PM Partly Cloudy - hot 90's			IMPORTANT TELEPHONE CALLS: Called Mr. Mawer to open entry gates		
PERSONNEL ON SITE: <u>Dickinson, ASHLEY + JMM</u>					

# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	6	24	92
	NO.			
	SHEET	1	C	

PROJECT NAME <u>Tooele Army Depot North</u> JMM		PROJECT NO. <u>508.01</u>
FIELD ACTIVITY SUBJECT: <u>Field Investigation</u>		
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:		
<p>0630 - Departed Quarters for Job site</p> <p>0650 - arrived Job site, loaded Equipment. was informed by Range Personnel that gate has not been locked. Told them that we would notify Security Guards when we leave. So they can Lock it.</p> <p>0740 - Conducted Tailgate Safety mtg. departed for test pit site.</p> <p>0855 - Pit contained Frag. No ordnance</p> <p>1000 - Pit contained Frag. No ordnance</p> <p>1010 - Delay Bureau operation and lunch</p> <p>1200 - Pit contained Frag. lot of Small pieces of Explosive around hole</p> <p>1310 - Pit contained Frag. No ordnance</p> <p>1410 - Started digging up Firing Line Cable that was cut by backhoe during a test Pit. Dig up for Repair.</p> <p>1500 - Finished digging up Firing Line Cable started cleaning Test Pit.</p> <p>1645 - Finished cleaning Test Pits. unloaded equipment in site Trailer. departed site with Steam cleaner Trailer to fill Water tank and Park at office Trailer.</p> <p>1730 - Complete for day. 4 Pit completed.</p>		
<p>ordnance(Lite) located.</p> <p>1 Base of Fuse</p> <p>3 BLU 26 Fuzes</p> <p>2 - 20 MM</p> <p>1 02 <del>20</del> 20mm</p> <p>2 - BLU-3 Fuzes</p> <p>4 02. HE</p>		
<p>NOTE: Backhoe plus operator to open Pit to Repair cable. 2 hours. one additional person for 30 min.</p>		
VISITORS ON SITE: <u>Deb Design (JMM)</u>		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: <u>Clear-windy-warm AM</u> <u>Cloudy-windy-hot PM</u>		IMPORTANT TELEPHONE CALLS: <u>Talked to Tom about up coming Schedule</u> <u>Would Demob Tom on 3 Jul.</u>
PERSONNEL ON SITE: <u>Dickman, ANELL + INARA</u>		

UNB

# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	6	10	92
	NO.			
	SHEET	1	OF	1

PROJECT NAME	Tosale Army Depot North JMM			PROJECT NO.	508.01
FIELD ACTIVITY SUBJECT: Field Investigation					
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:					
<p>0630 - departed Quarters For Office Trailer to Pick up steam cleaver.</p> <p>0710 - arrived Job site, loaded equipment</p> <p>0730 - Conducted Tailgate Safety Mtg. departed for Test Pit area. Park Trailer</p> <p>0850 - Pit Contained Frag. No ordnance</p> <p>1010 - Pit Contained Frag. 16 Live Art Fuzes, 1 XM 54 Artillery Buster, 1 BLU 3 Fuze. (items that <del>BLU 3</del> were left from in complete disposal operation.</p> <p>1025 - Delay Pot awaiting Deb (JMM), Range operation and lunch. (Test pit notes)</p> <p>11:30 - Went with Deb to identify more test pit areas. Tom helping with Survey</p> <p>12:45 - Departed with water tank to dump decon water at Building 609. Awe copy of Permit to Building Supervisor and he oked dumping.</p> <p>1430 - Started cleaning test pit site for next day.</p> <p>1530 - Tom finished with Survey and helped with cleaning test pit areas. Staked out more test pit areas.</p> <p>1650 - Completed cleaning test pit areas. Unloaded equipment in Job site trailer and departed for Office Trailer.</p> <p>1700 - Notified Security to lock CGO Gate.</p> <p>1730 - at office trailer. discuss future test pit areas.</p> <p>1730 - complete for day. 2 pit completed.</p> <p>live ordnance items.</p> <p>1 - BLU 3 Fuze</p> <p>1 XM 54 Buster</p> <p>16 - Art Fuzes in CANS</p> <p>2 02 HE</p> <p>1-20 mm</p>					
VISITORS ON SITE:			CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.		
Deb Davis JMM					
WEATHER CONDITIONS:			IMPORTANT TELEPHONE CALLS:		
cloudy Warm AM Cloudy Windy Hot in PM					
PERSONNEL ON SITE: DICKMAN, O'NEILL + JMM					

UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	6	26	92
	NO.			
	SHEET	1		

PROJECT NAME Taale Army Depot North JMM PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - Departed Quarters for Job site

0650 - arrival Job site. loaded equipment. entry gate OPEN.

0735 - Conducted Tail gate Safety MTG. departed for test Pit area. <sup>Surveyed</sup> in 1 Pit.

0905 - Pit Contained Frag, Burn Pad with many BLU-26 Fuzes in it. All appeared to be disposed of.

1025 - Pit Contained Burn layer on top - Frag - Tank boggie wheel Lower No ordnance

1210 - Pit Contained Banding, Apple Iron, MK10 Igniter Charge adaptor, Anne Box hardware Bid Pits, lot of stuff No live ordnance None

1230 - 1300 lunch.

1500 - Pit contained Frag, Burn residue, Fuse residue. No live ordnance

1515 - assisted / escorted JMM to Survey in Test Pits.

1530 - Started cleaning test pit areas for next days operations.

1650 - Completed cleaning test pits. Unloaded Equipment in site Trailer. departed for Office trailer.

1700 - Notified Security By Phone to secure OBD ground gate.

1730 - at Quarters Complete for day. 4 test Pits Completed.

Live ordnance located

1 02 HE

1. 20mm

2 BLU-3 Fuzes

N/A

VISITORS ON SITE:

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:

Cloudy - Cool AM to Warm Light Rain

Cloudy warm PM

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickson ... Army / & ...

# FIELD ACTIVITY DAILY LOG

DATE	6	27	92
NO.			
SHEET	1		1

PROJECT NAME Toole Dam, Depot North LAH PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0630 - departed Quarters for Job Site  
 0650 - arrived Job Site Trailer, loaded equipment  
 0740 - Conducted Tailgate Safety Mtg, departed for Test Pit area  
 0935 - Pit contained nothing  
 1110 - Pit contained nothing  
 1130 - 1200 Lunch  
 1345 - Pit contained nothing  
 1515 - Pit contained Nothing then excavated in Quarry Test Pits  
 1530 - Started clearing Test Pit Sites for next day operations  
 1700 - Completed clearing Test Pit Sites, unloaded equipment in Site Trailer  
 1705 - Notified Security to Secure gates  
 1830 - Operations Complete for day. 4 Pits Completed

NOTE: Discussed upcoming schedule with Dave Shank and turn in of Bucher/Stanley. Also surface clearance only on path way for drill rig due to excessive amount of frag. he shed. He said to build another decom pad in Trash pit area. Unless we hear something different.

Live ordnance located

- 1 vt. Fuze  
 1 62 HE  
 2. 20 MM

VISITORS ON SITE:  
 Heavy Woods unknown  
 Deb Devin Jmm  
 Dave Shank Jmm

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WATHER CONDITIONS:  
 Mostly Cloudy. Warm Am  
 " " Hot PM

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickmann, O'Neill + JMM

# UXB

DAILY LOG	DATE	6/28/92
	NO.	
	SHEET	1

## FIELD ACTIVITY DAILY LOG

PROJECT NAME	Teale Damu Depot North JMM		PROJECT NO.	508.01
FIELD ACTIVITY SUBJECT: Field Investigation				
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:				
0630 Departed Quarters for Job Site				
0655 Arrived Job Site trailer, loaded Equipment on truck. Contacted Security To open gate to area.				
0745 - Conducted rail gate Safety Meeting. Departed for Test Pit area.				
0930 - Pit contained Nothing				
1110 - Pit contained Nothing				
1130 - DOD Lunch				
1400 - Pit contained Nothing				
1500 - Pit contained Nothing				
1520 - Started marking locations of test pits then started cleaning the test pit areas for tomorrow's operations				
1715 - Completed cleaning and marking test pit areas. Unloaded equipment in Site Trailer departed for Office trailer				
1720 - Notified Security to close gate then on to office				
Faxed INFO to Gail				
1800 - Operations complete for day. 4 Pits Complete				
Live Ordnance				
1-90mm TQ1				
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.		
Harry Woods (USATHANA)				
WEATHER CONDITIONS:		IMPORTANT TELEPHONE CALLS:		
Clear-Warm Am. Partly Cloudy Hot PM				
PERSONNEL ON SITE: Dickmann ONELL + JMM				

# FIELD ACTIVITY DAILY LOG

DATE	6/24/72
	NO.
	SHEET / OF /

PROJECT NAME Teale Army Depot North JMM PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

## DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0630 - Departed Quarters for Job Site.  
 0650 - Arrived Job Site Trailer, loaded Equipment.  
 0750 - Conducted tail gate Safety Mtg. departed for test Pit Area.  
 0930 - Pit contained Nothing.  
 1030 - 1130 Delay Burn operation / Lunch  
 1130 - Pit contained Nothing.  
 1305 - Pit contained Nothing.  
 1440 - Pit contained Nothing.  
 1450 - Started Clearing Test Pit areas for Next day operations.  
 1645 - Completed clearing test Pit areas: unloaded equipment in Site trailer, departed for Office Trailer.  
 1700 - notified Security to Secure gate at 0800.  
 1710 - arrived Office Trailer. Discuss schedule.  
 1730 - Completed operations for day. 4 test pits completed.

Live ordnance located

7.2 HE

1 - Fuse Cap

1 - 20mm

5 - BLU-2 FUSE

VISITORS ON SITE:

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:

Cloudy Very windy AM/PM

IMPORTANT TELEPHONE CALLS:

Called Tom. informed him about turning back in and what equipment to keep.

PERSONNEL ON SITE: DUMMAR, ONELL T JMM



# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	6	30	92
	NO.			
	SHEET	1		

PROJECT NAME	Tonak Army Depot North Iowa	PROJECT NO.	508.01
FIELD ACTIVITY SUBJECT: Field Investigation			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:			
<p>0630: Departed Quarters for Job Site.</p> <p>0650: Arrived Job Site. Trailer loaded equipment. OBOD gate not locked.</p> <p>0800: Conducted Tailgate Safety Mtg. - departed for test pit site.</p> <p>0945: Pit contained Nothing.</p> <p>1045: Pit contained Burned Residue. No ordnance.</p> <p>1100-1130: Lunch.</p> <p>1320: Pit contained Nothing. Same Find.</p> <p>1445: Pit contained Nothing. Same Find.</p> <p>1500: Started cleaning test pits for tomorrow.</p> <p>1720: Completed cleaning test pits. Unloaded equipment in Site Trailer, departed Job Site for office trailer.</p> <p>1735: Notified Security to secure gate at 0800, he asked me if I know what key locked it.</p> <p>1745: Arrived office trailer. No messages or fax's.</p> <p>1800: Completed operations for day. 4 Test Pits Completed.</p>			
<p>Live ordnance located</p> <p>3 lbs HE                      1-25.16 Frag Bomb.</p> <p>7-20 mm</p> <p>2-BLU-3 Fuzes</p> <p>1-Fuze Boxer Cup</p>			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.	
<p>Harry Woods</p> <p>Larry Fisher + 3 State people</p>			
WEATHER CONDITIONS:		IMPORTANT TELEPHONE CALLS:	
<p>Cloudy - Rains AM</p> <p>Cloudy - Cool PM</p>			
PERSONNEL ON SITE: Dishman, ... 1 ...			

# FIELD ACTIVITY DAILY LOG

DATE	7/1/82
	NO.
	SHEET 1 of 1

PROJECT NAME Tooele Army Depot North JMM PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

## DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - Departed Quarters for Security to obtain New Entry Badge and then to Job site.

0705 - Arrived Job site loaded equipment. OBD gate not locked.

0725 - Conducted tailgate safety mtg. departed for test pit area.

0915 - Pit contained frag only. No ordnance.

1015 - Pit contained Nothing. Some Frag. No ordnance.

1245 - 1115 Lunch

1300 - Pit contained Frag <sup>+ 1 Free</sup> No ordnance.

1420 - Pit contained Frag. banding wood. No ordnance.

1430 - Started Marking locations of Test pits to be Reopened tomorrow.

1545 - Completed marking Test Pits. unloaded equipment in Site trailer. hooked up to Steam cleaner to Refill tank.

1600 - Notified Ammo to secure OBD gate.

1630 - Filled Steam Cleaner Trailer.

1700 - Unhook Steam Cleaner trailer at office trailer, discussed Tomorrow's schedule.

1730 - Operations Complete for day 4 Pits Completed.

Five Ordnance located.

3 - BU-3 Fuzes

## VISITORS ON SITE:

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

## WEATHER CONDITIONS:

Cloudy - Light Rain AM

## IMPORTANT TELEPHONE CALLS:

Called Tom with Project update.

PERSONNEL ON SITE: Dickmann, ONRILL + JMM

# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7	2	9
	NO.			
	SHEET	1		

PROJECT NAME Tooele Army Depot North JANU PROJECT NO. 608.01

FIELD ACTIVITY SUBJECT: Field Investigation

### DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0630 - Departed Quarters for ~~office~~ Office Trailer to pick up steam cleaning Trailer and Fax info to Office
- 0700 - Contacted Security to obtain entry to Access Road.
- 0725 - arrived Job site Trailer. Positioned Steam Cleaner. Loaded equipment.
- 0745 - Conducted Tailgate Safety Mtg. departed for test pit site.
- 0930 - Completed Reopening of Pit Con Samples, also Filming CREW Filmed Test pit operation. Pit contained alot of Metal
- 1045 - Completed Reopening of Pit. Pit contained hundreds of M5 Fuzes, No live ordnance
- 1100 - 1130 - Lunch
- 1235 - Pit contained smoke canisters & miss. No live ordnance Reopened Con Samples.
- 1400 - Reopened Pit. ~~then~~ contained Drum, banding, shipping Bands. ~~Live~~ 1-90 mm Proj. Located. Possible live HE
- 1405 - Started Steam Cleaning Backhoe for turn in.
- 1445 - Completed Cleaning Backhoe, Unloaded equipment in Site Trailer, Picked up Water Tank Trailer to empty and turn in.
- 1530 - Notified Security, are we're complete in Demo area to secure Gates.
- 1545 - Dump Water from tank trailer. Arrived Backhoe Security baby M.
- 1630 - Dropped TOM off at Motel. then ON TO turn in Backhoe, Water tank, And Trans Gen billing on Steam Cleaner.
- 1730 - Completed operations for day. 4 Pits Reopened. Live ordnance located. 1-90 MM HE 1-BLU-3 Fuse

### VISITORS ON SITE:

Deb Davis + 5 (Film crew)

### CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

### WEATHER CONDITIONS:

Cloudy - cool AM  
Cloudy - Warm PM.

### IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: T...

UXB

DAILY LOG	DATE	7/2/92
	NO.	
	SHEET	1 OF 1

# FIELD ACTIVITY DAILY LOG

PROJECT NAME Toole Army Depot North JMM PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

## DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0945 - Picked up Tom at Quarters to Transport him to Airport  
DEMOB.

1045 - Complete for day Tom ONWILL completed DEMOB

VISITORS ON SITE:

CHANGES FROM PLANS AND SPECIFICATIONS, AND  
OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: (Signature)

# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7	7	C
	NO.			
	SHEET	1		

PROJECT NAME <u>Tooele Army Depot North JMM</u>		PROJECT NO. <u>508.01</u>
FIELD ACTIVITY SUBJECT: <u>Field Investigation/Geophysics</u>		
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:		
<p>0630 Departed Quarters for Office Trailer awaiting JMM &amp; Dick Fox (Geophysics) Conduc</p> <p>0750 Conducted Tailgate Safety Mtg.</p> <p>0810 Went to Security to meet Dick Fox. (No one there). Then went to Job Site Trailer. Picked up 20 mm at 814, 1320 (located by term 3 JMM) and transported to Range.</p> <p>1000 Met with Dick Fox. Will be escorting them in Trash Burn Area.</p> <p>1110 departed for Job site.</p> <p>1645 Shut down operations at Trash burn site, unloaded Equipment at Site Trailer, took Geophysical People to Office Trailer. Show them the Depot.</p> <p>1730 operations thru for day.</p>		
<p>Note: Trash site are located with Survey Equipment then further identified with Geophysics (SU-314 MAG) <del>and</del> UXB escorting (Geo) to located Tracks and then clearing (surface) the area so they can conduct Geophysics</p>		
<p>Live ordnance located</p> <p>1-90mm M383</p> <p>1-20mm</p>		
VISITORS ON SITE: <u>Dave Shank</u>		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: <u>Cloudy - Warm</u>		IMPORTANT TELEPHONE CALLS:
PERSONNEL ON SITE: <u>D. - 1.</u> <u>2</u>		

# FIELD ACTIVITY DAILY LOG

DATE	NO.	
	SHEET	1 / 1

PROJECT NAME Toole Army Depot North Jan PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation Geophysical

## DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 Departed Quarters for Job site trailer  
 0655 arrived Site trailer. Loaded equipment.  
 0735 Conduct tailgate safety meeting, departed for work area  
~~0800~~ Started locating trenches with Geophysics.  
 1130-1200 Lunch.  
 Continued Geophysics the rest of the afternoon.  
 1645 Completed Geo. for day. unloaded equipment in site trailer and  
 departed for office trailer.  
 1715 Arrived at office trailer for messenger/check in  
 1730 Completed operations for day. 5 sites located.

Live ordnance located.

2 02 HE

1 02 Ballistic

1 - 81mm HE mortar

1 - M-16 mini AT

### VISITORS ON SITE:

Dick Fox

### CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

### WEATHER CONDITIONS:

Clean & Cloudy Warm 80's

### IMPORTANT TELEPHONE CALLS:

### PERSONNEL ON SITE:

Dickmann, & Practical Geophysics

# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7	9	9.
	NO.			
	SHEET	1		

PROJECT NAME Tooele Army Depot North JMM PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Geophysics

### DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 Departed Quarters for Badge Office to obtain Renewal. Then on to Office Trailer.

0715 - Departed Office Trailer for Job site

0740 - Arrived Job site Trailer, loaded equipment.

0745 - Conducted Tailgate Safety Mtg. Briefed Range personnel on Rounds Recovered yesterday and suggestions on disposal method. They have never disposed of W.P.

1200-1230 Lunch

1230 - Continued Geophysics.

1650 - Completed Geophysics for day. unloaded equipment in Site Trailer. And departed for Office Trailer for Messager, electrical.

1730 - Completed operations for day.

Note! Numerous 75mm Smoke, 90mm Smoke, 105mm Smoke, 3.5" Rocket Smoke, were found during Geophysics. All Rounds were empty.

Live Ordnance Located.

1 - SLAP FLARE M125

### VISITORS ON SITE:

Dan/Rob JMM

### CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

### WEATHER CONDITIONS:

Clear. Warm. 80°

### IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: DeKornant, Pearlman, Gault

**DBB**

DATE	7	10	92
	NO.		
	SHEET / OF /		

# FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JMM PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Geophysics

## DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630. departed Quarters for office trailer. Contacted c.H.ice  
 0710 - departed for job site trailer  
 0730 - Arrived job site trailer ~~and~~ loaded equipment  
 0740 - Conducted tailgate Safety Mtg, and departed for work area  
 0800 - Started Geophysics Survey, Larry Fisher on site 0830,  
 1145- 1215 Lunch  
 Continued with Geophysics in ~~area~~ Trench pit area.  
 1215 - Continued with Geophysics.  
 Cleared FAAG off Access Road.  
 1645 - Completed Geophysics for day. Unloaded equipment in site.  
 Trailer, departed for Office Trailer  
 1710 - arrived Office Trailer.  
 1730 - Operations Complete for Day.

Live ordnance located.  
 1 - 02 HE.

VISITORS ON SITE: Larry Fisher Dan & Rob Juhl	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: Clear to Partly Cloudy: Warm 80's (high)	IMPORTANT TELEPHONE CALLS:
PERSONNEL ON SITE: <u>Dickmann + Geophysics</u>	



# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7	11	92
	NO.			
	SHEET	1	0.	

PROJECT NAME	Tenele Army Depot North JMM	PROJECT NO.	508.01
FIELD ACTIVITY SUBJECT: <u>Geophysics</u>			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:			
<p>0630- departed Quarters for office Trailer on had Security upgrade</p> <p>0705- departed office trailer for site trailer.</p> <p>0730- arrived site trailer, loaded equipment.</p> <p>0740- conducted tail gate Safety Meeting, departed for work site and started Geophysics.</p> <p>1145-1215 Lunch</p> <p>1215: Back to Geophysics.</p> <p>1620- Completed Geophysics for day. 20 Sites complete to date. Unloaded equipment in site trailer and departed for office trailer, notified Security we were completed.</p> <p>1650- arrived office trailer.</p> <p>1730- Completed operations for day.</p>			
<p>Note: 90 mm HE, 76 mm HE, 55 mm HE, 105 mm HE Projectiles encountered. all empty.</p>			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.	
DAN + ROB JMM			
WEATHER CONDITIONS:		IMPORTANT TELEPHONE CALLS:	
<p>Cloudy - Cool AM</p> <p>Cloudy - Warm - PM</p>			
PERSONNEL ON SITE: <u>Dickman + Goshen (2)</u>			

# FIELD ACTIVITY DAILY LOG

DATE	7/21/92	
	NO.	
	SHEET	1 of 1

PROJECT NAME Troop Army Depot North JMM PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Geo Physics

## DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0630 - Departed Quarters for Office Trailer. Closed guards rd open gates
- 0710 - Departed Office Trailer for Job site. Security gate still locked. Contacted Security again to open gates.
- 0735 - Arrived Job site Trailer. Loaded equipment.
- 0745 - Conducted tail gate safety meeting, departed for work site.
- 1150 - 1220 - Lunch → Cleared area for Geophysics crew to work.
- 1220 - Rain delay
- 1300 - Geophysics Resumed all escorting Soil Sample team.
- 1315 - Conducted tail gate Safety Mtg for Soil Sample Crew. Reported JMM Team in taking Surface Samples from Box Elder Wash.
- 1600 - Completed taking Soil Samples. and started Surveying in some points in the Demo area. they where possible errors in previous surveys.
- 1730 - Completed Survey of test pits unloaded equipment in Site Trailer. Departed for Office Trailer.
- 1810 - arrived Office Trailer. Discussed work & Schedules.
- 1830 - Completed operations for day.

Note: encountered ONE Large Rattle Snake.

Live ordnance located during escort of Soil/Survey Sample Team (JMM) in Main Demo Area.

2 - 90 HE

1 - 20 mm

2 - BLU-3 Fuzes

1 - BLU-3

VISITORS ON SITE:

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:

Cloudy - Light Rain. Cool AM  
Cloudy - warm PM

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickman + Geophysics + JMM

UXB

# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7/13/92
	NO.	
	SHEET	1

PROJECT NAME <u>Troop Army Depot North JMM</u>		PROJECT NO. <u>508.01</u>
FIELD ACTIVITY SUBJECT: <u>Geophysics</u>		
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:		
<p>0630 departed Quarters for office trailer, get phone + meeting, call</p> <p>0705 departed office trailer for job site.</p> <p>0735 arrived job site trailer, loaded equipment. Briefed Range Personnel of ordinance found.</p> <p>0745 conducted tad gate safety meeting, departed for work site.</p> <p>0755 Started Geophysics operations.</p> <p>1200-1230 lunch. Then back to Geophysics.</p> <p>1625 - Geophysics complete for day. Departed for Site Trailer, unloaded equipment, hooked up Exam cleaning trailer to fill tank to office.</p> <p>1630 - Departed for pump house to fill tank. contacted Capt.</p> <p>1650 - at pump house to fill tank. contacted fire dept to turn pump on.</p> <p>1800 - Fire dept turned on pump and filled tank then towed it to office trailer where discussed day activities.</p> <p>1830 - operations complete for day.</p> <p>29 sites completed with Geophysics.</p>		
VISITORS ON SITE: <u>MARY Eileen HOFFNER USARMC</u> <u>LARRY FISHER SMC TROOP.</u>		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: <u>Partly Cloudy - Cool AM</u> <u>Warm PM 80°</u>		IMPORTANT TELEPHONE CALLS:
PERSONNEL ON SITE: <u>Dickman... + Geophysics (?)</u>		

# FIELD ACTIVITY DAILY LOG

DAILY	NO. 714 VR
	NO.
	SHEET / OF /

PROJECT NAME Tacale Army Depot North: Jmm PROJECT NO. 508 C1

FIELD ACTIVITY SUBJECT: Geophysics

## DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed Quarters for Office Trailer  
 0710 - departed Office Trailer for Laporte Trailer  
 0735 - Arrived site trailer, loaded equipment, awaiting (Geo. Physics)  
 0750 - Conducted tailgate Safety Mtg. departed for work site. Started Sweeping Site for Pits  
 1130-1200 - Lunch.  
 1230-1300 Rain Delay then Continued Geophysics  
 1645 - completed Geophysics for day. departed worksite for Site Trailer  
 1655 - Unloaded equipment in site trailer. departed Site Trailer for Office trailer thru Bents and home.  
 1800 - Completed operations for Day.

Geophysics completed locating 13 Sites.

Live ordnance located.

1 - 105 mm M323

1 - Fuzo Mine AT M60.3

## VISITORS ON SITE:

## CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

## WEATHER CONDITIONS:

Partly Cloudy - Warm AM  
 Warm light Rain  
 Partly Cloudy - Hot PM

## IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickman, + Geo physics (2)

# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7	15	92
	NO.			
	SHEET	1	0	

PROJECT NAME Tooele Army Depot North JMM PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Geophysics

### DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630. departed Quarters for office.  
 0705 departed office trailer for job site.  
 0730. arrived Site Trailer, loaded equipment. Rechecked Range  
 Supervisor on ordnance located. 2 Burns, 1 detonation today.  
 0745. conducted rail gate Safety Meeting, departed Site Trailer  
 for job site and started Geophysics and clearing of area.  
 1245 - 1248 lunch then back to Geophysics. Deb was on site to check  
 function of EM-31 and GSM-8.  
 1630. completed Geophysics for day, departed job site for Site  
 Trailer. Second ordnance found.  
 1648. departed Site Trailer, unloaded equipment, departed for  
 office trailer. 8 sites located.  
 1715. arrived office trailer.  
 1730. operations completed for day.

Live ordnance located.

- 1- Non-electric Blasting Cap.
- 1- Fuzed M557

### VISITORS ON SITE:

Deb Davis JMM

### CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

### WEATHER CONDITIONS:

Cloudy. Light Rain

### IMPORTANT TELEPHONE CALLS:

Updated office

PERSONNEL ON SITE Dickman, J. Geophysics (2)

# FIELD ACTIVITY DAILY LOG

DATE	7/16/93
	NO.
	SHEET 1

PROJECT NAME Tacale Army Depot North JAAM PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Geophysics

## DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0630 - departed Quarters for Office Trailer. Briefed on day operation
- 0710 - departed Office trailer for site trailer
- 0735 - arrived Site Trailer, Loaded equipment
- 0740 - Conducted tailgate Safety Meeting, departed for Job Site
- 0750 - arrived Job site and started Geophysics and Cleanup
- 1130-1200 Lunch - then continue with Geophysics
- 1500 - Completed Geophysics. 42 sites located, cleaned and Geoplot
- 1515 - unloaded equipment in Site trailer. Secured all explosive items, ~~Site~~ Range. Prepare for 4 day break.
- 1640 - departed for Office Trailer
- 1645 - arrived Office Trailer, discussed past 12 days work and the next ten day cycle.
- 1700 - departed Office Trailer for Bank and Pay Bills, get Fuel.
- 1730 - Completed operations for day

Note. 42 sites located for Test Pits, test pits to be started about 4 aug.

Live ordnance located.

1 - RLU-4

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: Clear - warm to hot 90°	IMPORTANT TELEPHONE CALLS: updated office
PERSONNEL ON SITE: <u>Dickmann + Geophysics (2)</u>	

# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7/21/02
	NO.	
	SHEET	1

PROJECT NAME Hazle Army Depot North JAMM PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: DRAWN HOLE BORINGS

### DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0630: departed quarters for office trailer meeting with JAMM  
 0840: departed office trailer for site trailer to stake out soil boring sites.  
 0845: arrived site trailer, loaded equipment. showed sergeants location of Bldg 4 in work area. they will detonate it tomorrow awaiting JAMM to stake location of soil borings.  
 1130: Del. Harry Woods and I departed Site Trailer to stake out soil boring sites.  
 1245: completed striking of sites.  
 1245-1315: lunch.  
 1315: started clearing soil boring areas.  
 1415-1440: Delay for burning operations.  
 1515: completed clearing soil boring site departed for site trailer.  
 1725: at site trailer, unloaded equipment departed for office trailer.  
 1745: arrived office trailer, discussed soil boring activities and plans for tomorrow.  
 1825: departed office trailer.  
 1830: Completed for day.

NOTE: was Requested by JAMM to take some photographs for them.

live ordnance

B-C explosives

### VISITORS ON SITE:

Harry Woods

### CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

The Field Reconnaissance and Monitoring for suspected Unexploded Ordnances Form was deleted from USIT

### WEATHER CONDITIONS:

Clear No 90's.

### IMPORTANT TELEPHONE CALLS:

Contacted office

PERSONNEL ON SITE: Dickmann

028

# FIELD ACTIVITY DAILY LOG

DATE	7.22.93		
	NO.		
	SHEET	1	OF 1

PROJECT NAME Tanab Denny Depot North JMW PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Soil boring

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0630: Departed Quarters for Badge issue office awaiting drilling crew.
- 0635: Arrived Badge office. 0730 Conducted Tailgate safety Mtg.
- 0738: Departed Badge office to fill Water Tank. then Depart for Job site/Trailer.
- 0830: Arrived at job site Trailer. Briefed Drilling Crew on site. Checked in with Range officer, gave tour to Head Driller, set up down pad, secured equipment, went to first soil boring.
- 0940: setting up on first soil boring site. SB BK 2006
- 1000: Started Soil Boring. Conducted down hole Clearance every 5 feet for 20 feet. BK SB 2006
- Notes: the drilling Rig used is an Air Rig and creates a lot of ground vibrations which may not be safe in an ordinance environment. Suggest use of hollow stem Auger. Will attempt to get a dozen to clean top surface (if) then clear with Freester, then Air Rig will be safer; will hopefully get it tomorrow. Hapay Woods was going to talk to Lanny Fisher.
- 1830: Completed drilling for day, departed for Site Trailer.
- 1840: Unloaded equipment in Site Trailer and departed for Office Trailer.
- 1900: arrived office Trailer, discussed operations for today & tomorrow.
- 1930: Completed operations for day.

Note: at 5 ft the rig is moved away to permit MK 26 usage. and the same at 10 ft. 15' and 20' the rig was left in place for MK 26 usage.

VISITORS ON SITE:

Dunc Hawk  
Hapay Woods

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

Possible Dozer to clean Soil Boring Areas. Areas would be smaller than 75 ft Radius

WATHER CONDITIONS:

Partly Cloudy 80's

IMPORTANT TELEPHONE CALLS:

Called office about visiting Air Rig in Demo Area. Recommend Hollow stem in future, ordinance areas.

PERSONNEL ON SITE:

Dickman & Drilling Crew (4). JMW (2)



# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7	23	9:
	NO.			
	SHEET	1		

PROJECT NAME Toole Army Depot North LAUN PROJECT NO. 508 01

FIELD ACTIVITY SUBJECT: Soil BORINGS

### DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0625 Departed Con Jobsite.
- 0650 Arrived Job site, brief Range people, loaded equipment on truck.
- Dozer Driver to arrive at 0800.
- 0710 - conducted tailgate safety meeting. Departed Site Trailer for Work site.
- 0820 - at Work Site. Start grading hole. Showed dozer driver where and how to clean off Soil boring sites and got him going.
- then Started cleaning first site (that was dozer cleaned) with Coerslee. Complete.
- 1045 - first site cleaned and Soil boring rig set up on it. everything Worked Very Well for 1st 20' of Clearance.
- 1530 Drill rig broke down for day. Removed parts for repair.
- 1630 Started cleaning additional sites for Soil boring.
- a total of 4 sites cleaned of top surface (12") by dozer.
- 1700 completed cleaning for today. unloaded equipment in site trailer. and departed for quarters.
- 1800 finished operations for day. 15 minute Wait for security to open gates to get out of Anne Area.
- 1 Soil boring Complete (total).
- 2nd soil boring down to 40'

### VISITORS ON SITE:

Dave Shank JMM  
 Harry Woods  
 Bob Davis  
 Richard Jefferson (owner)

### CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

dozer to clear top 12" of soil removes most of the frag and makes it much easier to clean with Coerslee.

### WEATHER CONDITIONS:

Clear. 80's

### IMPORTANT TELEPHONE CALLS:

Contacted office about dozer operation

PERSONNEL ON SITE Diobma... Diobma... ... (2)

**DXB**

**FIELD ACTIVITY DAILY LOG**

DAILY LOG	DATE: 7/24/92
	NO. _____
	SHEET _____ OF _____

PROJECT NAME *Todele Army Depot North JMM* PROJECT NO. *508.01*

FIELD ACTIVITY SUBJECT: *Soil Boring*

**DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:**

0630 - departed Cuernetters for job site trailer.  
 0655 - arrived site trailer, loaded equipment on truck awaiting driller & JMM.  
 0745 - Conducted Tail gate Safety Mtg. departed for work site. Escorting JMM / Drilling crew at work site in demo area.  
 1030 - 1200 - Started setting up next site and clearing it.  
 1200 - 1400 - on drilling site with all crews.  
 1400 - 1600 - Finished clearing and setting up next soil boring site. *Completed 50-001*  
 1600 - Started moving equipment to next soil boring site, cleaning equipment and moving it.  
 1725 - Departed site trailer, unloaded equipment in trailer.  
 1745 - checked on drilling team getting water, dropped off paper work at office.  
 1800 - operations complete for day.

*2 Complete Soil Boring finished to date*

NOTE: Foster SN: 672 Sensitivity Switch went bad.

VISITORS ON SITE: <i>Deb Drinn JMM</i>	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
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OTHER CONDITIONS: <i>Clear 80's</i>	IMPORTANT TELEPHONE CALLS: <i>Called Tom pm to Report Foster down.</i>
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PERSONNEL ON SITE: *Dickman, JMM (2) Driller (2)*

# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7/25/96
	NO.	
	SHEET	1

PROJECT NAME	Tovle Army Depot North 100M	PROJECT NO.	508.01
FIELD ACTIVITY SUBJECT: Soil Boring			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:			
<p>0630 - Departed Quarters for Job site trailer</p> <p>0650 - Arrived site trailer, loaded equipment on truck.</p> <p>0715 - Conducted Tail gate Safety Meeting, Departed for work site</p> <p>0745 - Started soil boring down hole clearance.</p> <p>0940 - down hole clearance completed on hole. SB-005</p> <p>Soil boring continued until finished then moved to next Soil Boring</p> <p>10:30 - 13:30 clearance (surface/sub surface) completed on next soil boring location.</p> <p>1720 - down hole clearance completed on Soil Boring SB-004</p> <p>1815 - Stopped drilling for day. secured all equipment. Unloaded equipment in site trailer. Contacted security to open gates.</p> <p>1830 - departed Job site trailer for pump house to fill Water Tanks had 15 minute wait for security guards</p> <p>1910 - Water tanks filled, went to office trailer</p> <p>1930 - operations complete for day.</p>			
<p>Live ordnance located</p> <p>2 - 20 mm</p> <p>8 - 02 HE</p>			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.	
Richard Loffenies (Lugue)			
WEATHER CONDITIONS:		IMPORTANT TELEPHONE CALLS:	
Clear to partly Clouds 80's			
PERSONNEL ON SITE: D. L. Loffenies, D. L. Loffenies, A. L. Loffenies			

UXB

# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7 Feb 1992
	NO.	
	SHEET	1 OF 1

PROJECT NAME	Tooele Army Depot North JAIM1	PROJECT NO.	528.01
FIELD ACTIVITY SUBJECT: Soil Borings			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:			
<p>0630: departed: Quarters for job site trailer.</p> <p>0655 arrived site trailer, Loader. Equipment</p> <p>0710: Conducted tail gate safety Meeting, and departed for job site to continue soil boring.</p> <p>0900-1300 Cleared site for next soil boring. had to use dozer to clear top surface first. Complete clearing then set up drill rig.</p> <p>1300 Completed soil boring SB-004 and set up on SB-003</p> <p>1400 - Started clearing area for next soil boring.</p> <p>1600 - Completed clearing for today.</p> <p>1600-1730 Collecting explosive reactivity Samples from Future Soil Boring Sites.</p> <p>1730 - Started <del>Securing</del> Securing equipment and Rigs for the day. Unloaded equipment in site trailer. locked gates. Contacted Security to open gate and Fire Dept to turn on pump house.</p> <p>1750 - departed job site to fill water tanks</p> <p>1825 - Water tank filled for tomorrow and departed for office trailer.</p> <p>1835 - arrived office trailer discussed past work and schedule for the rest of week.</p> <p>1900 - Operations Completed for day.</p>			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.	
Richard J. Haines (hoyne)			
WEATHER CONDITIONS:		IMPORTANT TELEPHONE CALLS:	
Partly Cloudy 90°			
PERSONNEL ON SITE: Dietmann, Drillers (3) JAIM (2)			

UXB

# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7	27	9
	NO.			
	SHEET	1		

PROJECT NAME *Touele Army Dept North. JAMA* PROJECT NO. *508.01*

FIELD ACTIVITY SUBJECT: *Soil Boring*

## DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0620 - departed Quarters for FED. EX and office trailer.  
 0640 - departed office trailer for site trailer.  
 0705 - Arrived site trailer. loaded equipment.  
 0725 - Conducted tail gate safety Mtg. departed site trailer for Mah location and started drilling operations. escorted JAMA to Survey in last soil boring.  
 0845 - escorted Rob & Dan (JMA) to do a Background hand auger. Soil boring to 4 feet.  
 0950 - Complete with hand soil boring and setting up equipment on next soil boring. SB-003 Completed.  
 1025-1050 - Delay due to range burning operation.  
 1050 - Resumed drilling.  
 1230-1400 - started clearing next soil boring location.  
 1410-1440 - delay for burning operations on range.  
 1445 - Resumed drilling, also clearing next soil boring site.  
 1701 - Completed clearing next boring site.  
 1700 - Shut down operations on site, ready for next location.  
 1905 - secured equipment in site trailer. SB-002 Completed.  
 1910 - departed site trailer for pump house to get water.  
 1955 - Could not get pump house running to get water. departed for office trailer.  
 2005 - at office trailer. turned in Paper work and obtained for Next days.  
 2030 - Completed operations for day.  
 Live ordnance  
 6.02 HE, 1/2 of BLU-3 with explosive. 1 unknown item.

### VISITORS ON SITE:

*Larry Fisher*

### CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

### WEATHER CONDITIONS:

*Clear to Scattered Clouds 95*

### IMPORTANT TELEPHONE CALLS:

*Updated 10m on report*

### PERSONNEL ON SITE:

*Dickman Lawler (?) Smith*

UAB

# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7 128 98
	NO.	
	SHEET	1 OF 1

PROJECT NAME TCC/2 Army Depot North JALM PROJECT NO. 50K.C1

FIELD ACTIVITY SUBJECT: Soil Borings

## DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0630 departed Quarters for Pump house 3, Called Maintenance person to turn it on or fix it. an electrician then was called. an electrical storm knocked it out yesterday, they will attempt to fix today.
- 0710 Went by office to inform Del of Water situation, picked up steam cleaner and headed for Site trailer.
- 0745- arrived site trailer, loaded equipment and headed for Job site.
- 0755- Conducted Tail Gate safety meeting and then made final preparations on soil boring site.
- 0900 - started Brown hole Clearance on SB-008
- 1000 - Completed down hole clearance on SB-008, continue to drill
- 1030-1200 - Started clearing next ordnance site.
- 1220 - Drill rig broke down
- 1615 - Securing operations at work site, unable to get Rig running
- 1640 - Unloaded equipment in site trailer and depart for office trailer.
- 1702 - arrived office trailer to prepare tomorrow activities
- 1730 - operations complete for the day.

## VISITORS ON SITE:

Deb Drain, Sam, Peter Lavonne (JMM)  
Richard + electric + mechanic.  
Dan - JMM

## CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

## WEATHER CONDITIONS:

Clear - Hot 100

## IMPORTANT TELEPHONE CALLS:

## PERSONNEL ON SITE:

Dick Drain, Lavonne (3), JMM (2)

UXB

# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7	20	82
	NO.			
	SHEET	1	6	

PROJECT NAME	Tocole Army Depot North	JAN 1	PROJECT NO.	508.01
FIELD ACTIVITY SUBJECT: <i>Sail Boring</i>				
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:				

0630 - Departed Quarters for Job site trailer  
0650 - Arrived Job site, loaded equipment on truck.  
0710 - Conducted Tail Gate safety Meeting. Assembling Mechanic for Reg.  
0730 - departed site trailer for sail boring location, escort Jefferson  
Mechanic.  
0930 - 1145 finish clearing sail boring location. awaiting Drill rig set up  
1215 - SB-008 completed Setup on SB-007 and down hole clearance  
started.  
1320 - down hole clearance completed on SB-007.  
1345 - 1600 - Conducted clearance of Night Sail Boring location  
1600 - 1710 - escorting Layne with equipment.  
1830 - SB-007 completed.  
1730 - 1845 - finished clearing next site and prepare of for drill rig.  
1900 - Started securing equipment on site.  
1915 - Unloaded equipment on site trailer.  
1930 - departed site trailer for office trailer.  
2000 - arrived office trailer. turned in paperwork. Checked on  
drilling crew to make sure water pump house on.  
2030 - operations completed for day.

VISITORS ON SITE: <i>Richard Jeffersons (Layne) + mechanic Doh Drain.</i>	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: <i>Cloudy to Clear. 97°+</i>	IMPORTANT TELEPHONE CALLS: <i>Tom - Job update.</i>

PERSONNEL ON SITE: *Dickinson L... (7) 16.00.50*

# FIELD ACTIVITY DAILY LOG

DATE	7/30/92	
	NO.	1
	SHEET	1 of 1

PROJECT NAME Teale Army Depot North 101A1 PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Soil borings

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0630 - departed Quarters for Job site trailer
- 0700 - Arrived site trailer. Loaded equipment on trailer.
- 0720 - Conducted Tail gate safety meeting. departed for work site, set up Rig.
- 0825 - Started down hole clearance on SB-006.
- 0940 - Completed down hole clearance.
- 1130 - Made reservation for Soil here coming in on Monday for Test Pit digging. Continue with Soil boring.
- 1800 - Started securing drilling rods, removing debris pad. Unloaded equipment in trailer.
- 1830 - departed site trailer for main base to dump debris water in approved area.
- 1905 - finished dumping debris water and out to office trailer.
- 2300 - Completed operations for day and 10 day cycle. 9 soil borings completed.

VISITORS ON SITE:  
Richard Jefferson + 2 (Layne)

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:  
Clear - hot 98° +

IMPORTANT TELEPHONE CALLS:  
Call to Tom project update

PERSONNEL ON SITE: Dickmann, Layne (S), JMA (R)



# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	8	4	92
	NO.			
	SHEET	1	OF	

PROJECT NAME	Tooele Army Depot North		JMM	PROJECT NO.	505.01
FIELD ACTIVITY SUBJECT: Field Investigation					
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:					
<p>0630 - departed Quarters for Badge office to obtain badges. Then on to office trailer for meeting and get steam cleaner.</p> <p>0750 - departed office trailer for site trailer.</p> <p>0830 - arrived site trailer, loaded equipment in truck, backhoe on site.</p> <p>0930 - departed for site, staked test pit locations, 1</p> <p>1130 - 1200 Lunch</p> <p>1200 - started construction of decorp pad: marked off safety zone for test pit and surface cleared area.</p> <p>1315 - started digging 1st test pit</p> <p>1500 - finished digging / decorp of backhoe on first test pit.</p> <p>1535 - started clearing test pit site for next day operations.</p> <p>1650 - Completed clearing test pit sites and departed for site trailer.</p> <p>1700 - unloaded equipment in site trailers. departed site with steam cleaner to fill it.</p> <p>1745 - Steam cleaner tank filled. Then taken to office trailer.</p> <p>1815 - departed office trailer to take Cole to quarters and then onto to fix flat tire, get hydraulic oil for backhoe, get fuel for backhoe and steam cleaner. Cole complete at 1830.</p> <p>1930 - operations complete for day.</p> <p>1 Pit Completed.</p>					
<p>NOTE: all test pit sites are surface cleared then sub surfaced cleared in test pit area only. then checked again at lower depths.</p>					
<p>Line Ordnance located 02 HZ</p>					
VISITORS ON SITE:			CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.		
WEATHER CONDITIONS:			IMPORTANT TELEPHONE CALLS:		
Clear to scattered cloudy. 95° (high)			Tom Yarny - Project update		
PERSONNEL ON SITE: Dickmann Cole, + Janu(2)					

# FIELD ACTIVITY DAILY LOG

DATE	8/15/92
NO.	
SHEET	1 OF 1

PROJECT NAME *Tropic Army Depot North JM121* PROJECT NO. *508,01*

FIELD ACTIVITY SUBJECT: *Field Investigation*

## DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

*0600* Departed quarters for office trailer. Pick up Steam Cleaner; Put on tire, tighten down tanks, depart for site trailer.

*0720* Arrive site trailer, load equipment in truck.

*0745* Conducted Tailgate safety Meeting.

*0800* Departed site trailer for test pit location, packed steam cleaner.

*0820* ready to start test pit.

*1200* Completed 3<sup>rd</sup> pit. Nothing in 1<sup>st</sup> 2, 3<sup>rd</sup> had smoke counter, 3.5 rocket/fuze.

*1225-1255* Lunch.

*1355* delay in digging due to lightning in area.

*1440* resumed digging test pit.

*1500-1525* Delay for lightning and rain. then resumed digging.

*1545* Finished test pit, pit contained Rocket Fuze, Rifle grenades and Eggs. Misc metal.

*1550* started clearing test pit sites for tomorrow.

*1630* Cleared 4 sites for tomorrow departed for site trailer.

*1730* Equipment unloaded in site trailer and departed for office trailer.

*1800* operations complete for day. 4 test pits completed.

LWC Ordnance  
1-20-06 Round  
1 02 HE

1-5" Rocket Fuze.

Fuze with Booster Ant. Elect.

VISITORS ON SITE:

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:

*clear - 90's high AM*  
*Cloudy - Rain in PM*

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE *Dickinson Cole, T. J. (2)*

# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	8	6	85
	NO.			
	SHEET	1		

PROJECT NAME Torole Army Depot North JMM PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

### DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0630 - departed Quarters for office trailer.
- 0715 - departed office trailer for site trailer.
- 0740 - Arrived site trailer, loaded equipment on truck.
- 0745 - Conducted tailgate safety, mlg departed for work site, escorting JMM to checking test pit locations in demo area.
- 0845 - ready to start digging test pits.
- 1200 - 2 pits complete. Both pits contained ordnance debris, bandaging, Assault Pans, smoke canisters, 5 gal solvent type can, 55 gal drums, Small arms shell casings, Misc. Metal.
- 1200 - 1230 lunch.
- 1500 - Completed 2 pits. 1 pit contained Nothing 2<sup>nd</sup> pit contained land mine parts, bandaging + misc metal items.
- 1515 - Started setting up and clearing test pit areas for tomorrow.
- 1630 - Completed clearing test pits.
- 1705 - Equipment unloaded in site trailer and departed for Quarters.
- 1730 - Operations complete for day.

4 test pits Completed.

Live ordnance located.

8 C2 H&E

#### VISITORS ON SITE:

Larry Fisher

#### CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

#### WEATHER CONDITIONS:

Cloudy - cool.

#### IMPORTANT TELEPHONE CALLS:

Call office Delayed update.

PERSONNEL ON SITE: Dickinson, Cole, L. 10401

# FIELD ACTIVITY DAILY LOG

DATE	TIME
NO.	
SHEET	OF 1

PROJECT NAME Tropic Army Depot North JAMA PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigations

## DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630. departed Quarters for office trailer  
 0710 - departed office trailer for site trailer.  
 0735 - Arrived site trailer, loaded equipment on truck.  
 0745 - Conducted tail gate safety meeting and departed site trailer for Mahabata  
 1145 - 2 pits complete. 1 contained smoke canisters and mine metal  
 @ contain small arms ammo  
 1145-1215 lunch the reserve digging  
 1220 - Backhoe owner (Walter) and family to exchange out backhoe  
 1430 - Back ready for trade out (Steam cleaned entire machine. good)  
 2 pits complete. 1. Live plates, mine metal, live residue.  
 @ mine, live residue.  
 1500. Replacement Backhoe on site and taken to Decon pad and a good  
 Decon was performed.  
 1530. Started setting up and clearing test pit sides for next day operations  
 1730 - Completed clearing test pits somewhat rain delays.  
 1740 - Unloaded equipment in site trailer and departed.  
 1800 - Completed operations for day.

4 Pits Completed.

Live ordnance located

1 - Signal Cartridge

1 - 75 MM Snake (incomplete Disposal)

## VISITORS ON SITE:

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

Will place cement pad on some of the test pit and escort survey team some time next week, also setting back door.

## WEATHER CONDITIONS:

Clear to Partly Cloudy 70-80  
 Rain in PM

## IMPORTANT TELEPHONE CALLS:

Called Tom. Project updates

PERSONNEL ON SITE: D. J. Johnson (CIC) + JMM (2)

# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	8	8	02
	NO.			
	SHEET	/	OF	

PROJECT NAME	North Rock Army Depot	PROJECT NO.	508.01
FIELD ACTIVITY SUBJECT: Field investigation			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:			
<p>0625 Departed quarters for office trailer, sent FAX and depart for site trailer.</p> <p>0710 Arrive site trailer, load equipment in truck.</p> <p>0800 - Conducted tailgate safety meeting and departed for work site.</p> <p>1045 - 1 Pit completed. Contained: Burn debris, Bandaging Material, Candle/Flare Residue, Misc. metal.</p> <p>1050 - Started second pit. Stopped after a about 48" (unusual) some 4.2" chemical rounds, intact and broken open rounds. Contacted Deb to contact Larry Fisher. Stand by waiting for answer.</p> <p>1135 - 1205 Lunch.</p> <p>1205 - Resumed digging pit. Pit contained 5" Rocket Motor, Pipe, Misc Metal. Visitors showed up on site to look at pit containing 4.2" (Rough). It was decided to abandon this pit. The base wanted it left open and they will take care of it. Unknown whether the 4.2" are Smokeless or a gas round at base the Goffed (Refined) Vane.</p> <p>1415 - Resumed test pit digging.</p> <p>1545 - Completed test pit. Contained 4 105mm Projectiles (spend)</p> <p>1600 - Started clearing test pit areas for tomorrow.</p> <p>1740 - Completed clearing test pit sites. Unloaded equipment in trailer and departed.</p> <p>1800 - All operations complete for day.</p> <p style="text-align: right;">3 Pits Completed 1 Pit. Abandoned.</p> <p>Five ordnance located.</p> <p>1 - 3.5" Rocket Fuze</p>			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.	
Larry Fisher } Deb Drain. Phil Marshall } Toole Gerald M. Wren } Depot Paul M. Lohmeyer }			
WEATHER CONDITIONS:		IMPORTANT TELEPHONE CALLS:	
Clear to Scattered Clouds - Windy 90%		Contacted Deb about Pit contents	
PERSONNEL ON SITE: D. L. ... A. L. ... (M. L. ...)			

# FIELD ACTIVITY DAILY LOG

DATE	9/1/92
NO.	
SHEET	7 OF 1

PROJECT NAME	TCC/Ec Heavy Dept North		JMM	PROJECT NO.	508.01
FIELD ACTIVITY SUBJECT: Field Investigation					
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:					
<p>0620 - departed Cuerners for job site trailer.</p> <p>0630 - (arrived at site trailer), loaded equipment</p> <p>0800 - Connected tail gate safely. Meeting, departed for work site.</p> <p>0930 - Pit completed, contained Banding, fables, Bone chipping/storage Bands, Misc metal (a lot).</p> <p>0930 - Flat tire taken from Back hoe to trailer to get fixed. Nothing open picked up Small compressor to keep tire aired up.</p> <p>1200 - Ready to dig pits again.</p> <p>1500 - 2 pits completed. (1) contained Appended (2) Rocker Motors, Banding, Misc, (3) pit contained Numerous 5" (appended) Rocker plates, Bone bone plates, Banding, Rods, a lot of metal scrap, Free Cans, 6mm expanded Rockers,</p> <p>1520 - start clearing test pits for tomorrow.</p> <p>1700 - finished clearing test pits for tomorrow.</p> <p>1710 - Equipment Unloaded in site trailer and departed.</p> <p>1730 - Operations Complete for Day.</p> <p style="text-align: center;">3 Pits Completed</p>					
VISITORS ON SITE:			CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.		
<p>WEATHER CONDITIONS:</p> <p>Clear hot 90%</p>			<p>IMPORTANT TELEPHONE CALLS:</p>		
PERSONNEL ON SITE: Dickman, Cole + Jmm (?)					

# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	8	11	82
	NO.			
	SHEET			01

PROJECT NAME	Tacale Army Depot North 1/11/84	PROJECT NO.	228.01
FIELD ACTIVITY SUBJECT: Field investigation			

### DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0625 Departed Quarters for office trailer to call office then headed for site trailer
- 0720 Arrived site trailer. Loaded equipment & asked local people for gate.
- 0805 - Conducted tail gate safety & departed for work site.
- 1130 - 2 pits completed. Both contained a lot of burning material. A lot of misc. metal. Some expended ordnance items.
- 1130 - Lunch
- 1535 2 pits completed. Both pits contained ash only.
- 1730 - Completed clearing tail pits for tomorrow. Blown hose on steam line.
- 1745 Pumped out decompad, unloaded equipment in site trailer and departed for Dump station.
- 1815 - Departed Dump station to get hose for steam cleaner.
- 1840 - operations complete for day.

the Base was working on the pit with 4.2" motors. we uncovered Sat.

4 Pits Completed.

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: Clear Nat 98-100	IMPORTANT TELEPHONE CALLS: Call Tom August 4/82

PERSONNEL ON SITE: [unclear] & [unclear]

UXB

DAILY LOG	DATE	5/1/68
	NO.	
	SHEET	1 OF 1

# FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North MM PROJECT NO. 588.01

FIELD ACTIVITY SUBJECT: Field Investigation 5

## DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- 0625 - Departed Quarters for Sub-site Trailer.
- 0650 - Arrived field site. dropped off water drums, air up lines on back hoe. time to start for steam cleaner.
- 0755 - Conducted Tailgate safety meeting and departed for work site started digging test pits.
- 1130 - Completed 3 test pits. 2 contained nothing 1 contained angle iron and channel iron.
- 1200 - departed with flat tire for backhoe and to obtain/cut tube for cement markers to be placed in 30 locations.
- 1400 - Returned to work site. put on tire. disconnected backhoe, pumped out decou pad into barrel, removed decou pad, and leveled ground out. then started putting in 3 foot x 6" tubes in 30 test pit locations. 2 foot back ground level.
- 1830 - Completed putting in tubes. pressured washed backhoe for turn in. Unloaded equipment in site trailer.
- 1845 - departed site trailer with backhoe pickup for office trailer & backhoe to parking lot outside security gate.
- 1930 - operations complete for day.

Live ordnance located.

3 Pits Completed.

1 - 855 MM HE

2 - 82 HE

1 - BLU-3 Fuse

1 - BLU-3

VISITORS ON SITE:

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:

Clear to scattered clouds 100°

IMPORTANT TELEPHONE CALLS:



# UXB

## FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	8	12	22
	NO.			
	SHEET	1	01	

PROJECT NAME	Troop Army Depot North	PROJECT NO.	508, 21
FIELD ACTIVITY SUBJECT: <u>Field Installation of Test Pit Markers</u>			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:			
<p>0600 Depart motel for Pass + ID. (Cole). Get new Badge, Depart for Janney Office</p> <p>0645. arrive office trailer And then onto Site Trailer</p> <p>0715. arrive site trailer, loaded equipment</p> <p>0750. Conducted Tail Gate Safety Meeting</p> <p>0810 - departed for work Site to start <del>start</del> Mixing Concrete for Marker Post in Selected test Pits.</p> <p>1030 - Bob was at medical appointment. Arrived Pass + ID to 100-100</p> <p>1100 - Renew badge then onto site trailer/work site</p> <p>1100 - Arrived work Site, received update on Job status - Range operation delay</p> <p>1145 - Paul Gray, finished his paperwork, he departed Site</p> <p>1230 - Cole departed Project Demos Bob continued to pour concrete. Consolidated explosive Huns Ran Range personnel to Dispersed off</p> <p>1600 - all (30) test pit concrete Markers in, Load equipment from trailer, extra Concrete, Decon Water, Steam Cleaner.</p> <p>1630 - Depart site trailer for dumpster for trash drop off, empty decon Water, then on to office trailer. <del>Arrived site</del></p> <p>1700: Arrived office trailer, Briefed Deb. Cleaned steam Cleaner for turn in, also wheelbarrow. Unloaded concrete, Lamps and other equipment.</p> <p>1750: departed office trailer to turn in Rental equipment.</p> <p>1830. Completed operation for day</p>			

VISITORS ON SITE: Del Drain	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: Clear to Scattered Clouds 100%	IMPORTANT TELEPHONE CALLS: Called Tom Project update.
PERSONNEL ON SITE: Bob, D, A	

**APPENDIX C**  
**LIST OF ORDNANCE ITEMS**

# **LIVE ORDNANCE ITEMS**

<b>ITEM</b>	<b>QUANTITY</b>
1. 75MM Smoke (partial)	1
2. 81MM Mortar HE	1
3. 90MM HE	2
4. 90MM M313	1
5. 90MM T91	1
6. 105MM HE	1
7. 155MM HE	1
8. 25 lb. Frag Bomb	1
9. 2.75" Rocket Warhead	1
10. 4 lb. Thermite Bomb	1
11. BLU-3	9
12. BLU-4	1
13. 40MM Projectile	8
14. M42 Grenade	2
15. M15 Mine	1
16. 20MM Projectile	77
17. 30-06 Cartridge	1
18. TNT Supplemental Charge	1
20. XM 54 Burst	1
21. M125 Slap Flare	1
22. Signal Cartridge	1
23. Non-Electric Blasting Cap	1
24. Unknown Ordnance Item	2
25. Rocket Propellant	2 oz.
26. Bulk High Explosive	11 lb. 14 oz.
27. BLU-3 Fuse	32
28. VT Artillery Fuse	5
29. BLU-26 Fuse	3
30. MK 93 Base Fuse	1
31. M562 Fuse	1
32. M557 Fuse	1
33. M603 Mine Fuse	1
34. 5" Rocket Fuse	1
35. 3.5" Rocket Fuse	1
36. Artillery Base Fuse	2
37. Artillery Fuse	20
38. Fuse Booster Cup	5
39. Fuse Adapter Booster	1
<b>Totals: Ordnance Items</b>	<b>192</b>
<b>Rocket Propellant</b>	<b>2 oz.</b>
<b>Bulk High Explosive</b>	<b>11 lb. 14 oz.</b>

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## Appendix G

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**MONTGOMERY WATSON**

## **APPENDIX G**

### **RESULTS OF EXPLOSIVES FIELD SCREENING**

#### **G.1 INTRODUCTION**

**G.1.0.1.** This appendix presents a summary of the field explosives screening activities which were conducted on selected soil samples collected during the RFI field work at TEAD-N. Also included are the results of the explosive reactivity testing conducted on selected samples by the Southwest Research Institute (SwRI) of San Antonio, Texas.

**G.1.0.2.** All soil samples scheduled to be submitted for explosive reactivity analysis were field screened for the compounds 2,4,6-TNT (trinitrotoluene) and RDX (cyclonite) utilizing methods developed by USATHAMA to detect the presence and quantity of these explosive compounds in a soil medium. The field screening activities were conducted for the purpose of avoiding the commercial shipment of material that could be explosively reactive, as defined in 40 CFR, part 261.23(a) 6.

**G.1.0.3.** Twenty-six soil samples were submitted for explosive reactivity testing according to the Gap Test and Internal Ignition Test. None of the samples were explosively reactive. A discussion of the methods and testing results as documented by SwRI is included in this appendix.

#### **G.2 SCOPE OF ACTIVITIES**

**G.2.0.1.** A total of 26 soil samples selected for explosive reactivity testing were screened for the compounds 2,4,6-TNT and RDX. Of these samples, 16 were collected from test pits excavated at the OB/OD Area (SWMUs 1, 1a, 1b, 1c, 1d), eight were collected from the deep soil boring locations at the OB/OD Area, and two samples were obtained from the AED Demilitarization Test Facility (SWMU 19). The samples were screened according to the USATHAMA methods "Field Method For The Determination of 2,4,6-TNT In Soil" and "Field Method For The Determination Of RDX In Soil", which are included in Appendix D of the project Data Collection Quality Assurance Plan (JMM, 1992).

## **G.3 FIELD SCREENING METHOD SUMMARY**

**G.3.0.1.** The field methods used for the sample screening specify a spectrophotometer which can operate at the ultraviolet wavelengths, specifically at 540 nm. The spectrophotometer used for the field screening procedure during the RFI was a Hach DR/2000 spectrophotometer, which has the capability to operate on battery power, but was operated on the available line current for the screening activities.

### **G.3.1. Field Method For The Determination Of 2,4,6-TNT In Soil**

**G.3.1.1.** Five calibration standards and a blank were prepared by the method of serial dilutions, and their absorbance readings used to construct a calibration curve on the DR/2000 spectrometer. A 20-gram portion of the respective soil sample was weighed into a 4-ounce glass bottle, 100 milliliters (ml) of pure acetone were added, and the bottle capped and shaken for three minutes. After standing for at least five minutes, a 25-ml portion of the extract was filtered through a 0.45  $\mu\text{m}$  Nuclepore filter and into a 25-ml cuvette, and the absorbance of this filtrate measured at 540 nm. About 0.1-0.5 g of sodium sulfite ( $\text{Na}_2\text{SO}_3$ ) and one pellet of potassium hydroxide (KOH) were added to the cuvette, which was capped and shaken for three minutes, and allowed to stand for five minutes. The resulting solution was again filtered through a fresh 0.45  $\mu\text{m}$  filter, and the absorbance obtained again at 540 nm. The initial absorbance reading was doubled and subtracted from the final reading. The resulting absorbance figure was proportional to the TNT concentration in the soil. The certified reporting limit (CRL) for this method is stated as 1.11  $\mu\text{g/g}$ .

### **G.3.2. Field Method For The Determination of RDX In Soil**

**G.3.2.1.** After setting a calibration curve on the spectrometer with five standards and a blank, a 20-gram subsample of the soil was prepared as with the method for TNT (above). A 10-ml portion of the extract was filtered through a 0.45  $\mu\text{m}$  Nuclepore filter and through an ion exchange resin to remove nitrite and nitrate. This filtrate was then acidified with glacial acetic acid and mixed with zinc dust, forming nitrite. This solution was again filtered through a 0.45  $\mu\text{m}$  filter into a solution of Griess color-forming solution, and allowed to stand for 10-15 minutes. The development of a pinkish to rose color was indicative of the presence of RDX. This solution was then filtered again through a Nuclepore filter into a 25-ml cuvette, and its absorbance measured at 540 nm. The absorbance was converted to soil concentration (in  $\mu\text{g/g}$ ) based on the previously-determined calibration curve. The CRL for this method has been reported as 1.4  $\mu\text{g/g}$ .

#### **G.4 SUMMARY OF FIELD SCREENING RESULTS**

**G.4.0.1.** Table G-1 summarizes the concentrations of the explosive compounds 2,4,6-TNT and RDX in the screened soil samples as determined by the previously-described field methods. As shown, none of the soil samples submitted for explosive reactivity testing were analyzed at concentrations which would support spontaneous explosive detonation during shipment.

**TABLE G-1****EXPLOSIVE REACTIVITY FIELD SCREENING RESULTS**

Sample Designation	2,4,6-TNT ( $\mu\text{g/g}$ )	RDX ( $\mu\text{g/g}$ )
EP-01-034-4.5'-5'	ND <sup>(a)</sup>	4.5
EP-01-042-2'-3'	1.15	11.0
EP-01-045-3.5'-4'	ND	3.5
EP-01-056-4.5'-5'	ND	ND <sup>(b)</sup>
EP-01-082-0-0.5'	486	890
EP-01-087-0-1'	2.14	ND
EP-01-089-0-1'	ND	ND
EP-01-091-1'-2'	ND	ND
EP-01-092-0-1'	ND	ND
EP-01-025A-3-3.5'	ND	ND
SS-19-002-0-0.2'	ND	ND
SS-19-006-0-0.2'	ND	ND
EP-01-096-1'-2'	ND	ND
EP-01-100-2'-3'	ND	ND
EP-01-104-1'-2'	1.9	ND
EP-01-108-5'-6'	2.4	ND
EP-01-113-6.5'-7'	2.1	ND
EP-01-118-0-3'	ND	18.4
SB-01-001-0-1'	ND	ND
SB-01-002-0-1'	2.7	ND
SB-01-003-0-1'	ND	ND
SB-01-004-0-1'	ND	ND
SB-01-005-0-1'	1.5	1.8
SB-01-006-0-1'	ND	1.8
SB-01-007-0-1'	ND	ND
SB-01-008-0-1'	ND	ND

(a) ND in the 2,4,6-TNT column = analyzed as less than the method CRL of 1.11  $\mu\text{g/g}$  TNT in soil.

(b) ND in the RDX column = analyzed as less than the method CRL of 1.4  $\mu\text{g/g}$  RDX in soil.



# SOUTHWEST RESEARCH INSTITUTE

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Chemistry and Chemical Engineering Division  
Department of Environmental Engineering

October 27, 1992

James M. Montgomery  
Consulting Engineers, Inc.  
4525 South Wasatch Blvd., Suite 200  
Salt Lake City, UT 84121

Attention: Mr. David L. Shank, Jr.  
Project Manager

Subject: Laboratory Results for Evaluation of 26 Soil Samples for Explosive Reactivity  
JMM Job No. 2942.0110  
JMM Contract No. DAAA15-90-0011  
SwRI Project No. 01-5132

Dear Mr. Shank:

The evaluation of 26 soil samples was conducted by SwRI for the purpose of determining explosive reactivity. Twenty of the samples were received in our laboratory on August 3, 1992 and six were received on August 17, 1992. The tests which included the Gap Test and the Internal Ignition Test were performed in accordance to procedures specified in "Methods of Evaluating Explosive Reactivity of Explosive-Contaminated Solid Waste Substances," Bureau of Mines, United States Department of the Interior, RI-9217, Report of Investigations, 1988. These tests were developed by the Bureau of Mines to evaluate the explosive reactivity as defined in Title 40, Code of Federal Regulations (CFR), part 261.23 (a)(6) and 7. The Gap Test and Internal Ignition Test are designed to determine sensitivity to shock and thermal stimuli respectively.

In the Gap Test, the criteria for detonation propagation (i.e., the sample gives a positive result) are as follows:

- (a) The sample tube is fragmented along its entire length,
- (b) A hole is punched in the witness plate, and
- (c) A stable propagation velocity greater than 4,900 ft/s (1.5 km/s) is observed.

In the Internal Ignition Test, the criteria for interpretation of a positive result is that either the pipe or at least one of the end caps be fragmented into at least two distinct pieces. Results in which the pipe is merely split or laid open or in which the pipe or caps are distorted to the point at which the caps are blown off are considered to be negative results.



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**Results:**

Summaries of results for the Gap Tests and Internal Ignition Tests for the 26 soil samples are presented in the appendix of this report. In addition, all the field data associated with these tests and photographs showing the hardware used are included.

As shown in the summary of results and associated field data, all of the 26 soil samples evaluated showed negative results for both tests since none met the criteria specified by the Bureau of Mines for a positive result. In summary all of the 26 samples evaluated "passed" the Gap and Internal Ignition Tests and are therefore classified as being non-reactive as far as explosivity is concerned.

Very truly yours,



Oscar Saenz, Jr.  
Manager

Approved:



Michael MacNaughton, PhD, P.E.  
Director

## **APPENDIX**

**INTERNAL IGNITION TESTS**

## INTERNAL IGNITION TEST

### 1. Black Powder Charge



### 2. Assemble Pipe to Top Cap



3. Fill with Soil Sample



4. Assemble Bottom Cap



INTERNAL IGNITION TEST  
23-29 SEPTEMBER 1932

SOIL SAMPLE	TEST NO.	PIPE		TOP AND BOTTOM CAPS		OVERALL RESULT
		SPLIT	FRAGMENTED	FRAGMENTE	DETACHED	
SS-19-006-0-2'	1	NO	NO	NO	NO	NEGATIVE
SS-19-006-0-2'	2	NO	NO	NO	NO	NEGATIVE
EP-01-009-0-1	3	NO	NO	NO	NO	NEGATIVE
EP-01-009-0-1	4	NO	NO	NO	NO	NEGATIVE
EP-01-056-4.5-5'	5	NO	NO	NO	NO	NEGATIVE
EP-01-056-4.5-5'	6	NO	NO	NO	NO	NEGATIVE
SB-01-005-0-1'	7	NO	NO	NO	NO	NEGATIVE
SB-01-005-0-1'	8	NO	NO	NO	NO	NEGATIVE
SB-01-007	9	NO	NO	NO	NO	NEGATIVE
SB-01-007	10	NO	NO	NO	NO	NEGATIVE
SB-01-001	11	NO	NO	NO	NO	NEGATIVE
SB-01-001	12	NO	NO	NO	NO	NEGATIVE
SB-01-002	13	NO	NO	NO	NO	NEGATIVE
SB-01-002	14	NO	NO	NO	NO	NEGATIVE
EP-01-007-0-1'	15	NO	NO	NO	NO	NEGATIVE
EP-01-007-0-1'	16	NO	NO	NO	NO	NEGATIVE
EP-01-118-0-3'	17	NO	NO	NO	NO	NEGATIVE
EP-01-118-0-3'	18	NO	NO	NO	NO	NEGATIVE
SB-01-006-0-1'	19	NO	NO	NO	NO	NEGATIVE
SB-01-006-0-1'	20	NO	NO	NO	NO	NEGATIVE
EP-01-096-1-2'	21	NO	NO	NO	NO	NEGATIVE
EP-01-096-1-2'	22	NO	NO	NO	NO	NEGATIVE
EP-01-104-1-2'	23	NO	NO	NO	NO	NEGATIVE
EP-01-104-1-2'	24	NO	NO	NO	NO	NEGATIVE
SS-19-002-0-.2'	25	NO	NO	NO	NO	NEGATIVE
SS-19-002-0-.2'	26	NO	NO	NO	NO	NEGATIVE
EP-01-108	27	NO	NO	NO	NO	NEGATIVE
EP-01-105	28	NO	NO	NO	NO	NEGATIVE
EP-01-042-2-3'	29	NO	NO	NO	NO	NEGATIVE
EP-01-042-2-3'	30	NO	NO	NO	NO	NEGATIVE
EP-01-100-2-3'	31	NO	NO	NO	NO	NEGATIVE
EP-01-100-2-3'	32	NO	NO	NO	NO	NEGATIVE
SB-01-004-0-1'	33	NO	NO	NO	NO	NEGATIVE
SB-01-004-0-1'	34	NO	NO	NO	NO	NEGATIVE
EP-01-113	35	NO	NO	NO	NO	NEGATIVE
EP-01-113	36	NO	NO	NO	NO	NEGATIVE
SB-01-008	37	NO	NO	NO	NO	NEGATIVE
SB-001-006	38	NO	NO	NO	NO	NEGATIVE
EP-01-091-1-2'	39	NO	NO	NO	NO	NEGATIVE
EP-01-091-1-2'	40	NO	NO	NO	NO	NEGATIVE
EP-01-025-3-3.5'	41	NO	NO	NO	NO	NEGATIVE
EP-01-025-3-3.5'	42	NO	NO	NO	NO	NEGATIVE
EP-01-002-0-.5'	43	NO	NO	NO	NO	NEGATIVE
EP-01-002-0-.5'	44	NO	NO	NO	NO	NEGATIVE
EP-01-045-3.5-4'	45	NO	NO	NO	NO	NEGATIVE
EP-01-045-3.5-4'	46	NO	NO	NO	NO	NEGATIVE
EP-01-034-4.5-5'	47	NO	NO	NO	NO	NEGATIVE
EP-01-034-4.5-5'	48	NO	NO	NO	NO	NEGATIVE
SB-01-003	49	NO	NO	NO	NO	NEGATIVE

22-01-003  
EP-01-092-0-1  
EP-01-092-0-1

50  
51  
52

NO  
NO  
NO

NO  
NO  
NO

NO  
NO  
NO

NO  
NO  
NO

NEGATIVE  
NEGATIVE  
NEGATIVE



INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 01

DATE 9-23-92

SOIL SAMPLE NO. SS-19-006-0-2'

TEMPERATURE 85° F

RESULTS

PIPE SPLIT

NO ☒

YES ☐

LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒

YES ☐

NO. OF PIECES

TOP CAP

DETACHED FROM PIPE

NO ☒

YES ☐

FRAGMENTED NO ☒

YES ☐

NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE

NO ☒

YES ☐

FRAGMENTED NO ☒

YES ☐

NO. OF PIECES

OVERALL RESULT POSITIVE ☐

NEGATIVE ☒

TEST PERSONNEL

JDE, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 04-5122-001

TEST NO. 02

DATE 9-23-92

SOIL SAMPLE NO. SS-19-006-D-2'

TEMPERATURE 84 F

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE  NEGATIVE ☒

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 03

DATE 9-24-92

SOIL SAMPLE NO. EP-01-089-0-1

TEMPERATURE 77

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-8132-001

TEST NO. 04

DATE 9-24-92

SOIL SAMPLE NO. EP-01-089-0-1

TEMPERATURE 77

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT           

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES           

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES           

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES           

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 05

DATE 9-24-92

SOIL SAMPLE NO. EP-01-056 4.5-5' TEMPERATURE 77

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-8132-001

TEST NO. 06

DATE 9-24-92

SOIL SAMPLE NO. EP-01-056 4.5-5'

TEMPERATURE 78

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 07

DATE 9-24-92

SOIL SAMPLE NO. SB-01-005-0-1'

TEMPERATURE 85

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 08

DATE 9-24-92

SOIL SAMPLE NO. SB-01-005-D-1'

TEMPERATURE 85

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:



INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 09

DATE 9-24-92

SOIL SAMPLE NO. SB-DI-007

TEMPERATURE 85

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 10

DATE 4-24-92

SOIL SAMPLE NO. SB-01-007

TEMPERATURE 85

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 11

DATE 9-24-92

SOIL SAMPLE NO. SB-DI-001

TEMPERATURE 88

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACK

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 12

DATE 9-24-92

SOIL SAMPLE NO. SB-01-001

TEMPERATURE 89

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JDE, Zach

ADDITIONAL COMMENTS:

AD-A282 574

TOOELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SWMUS

9/15

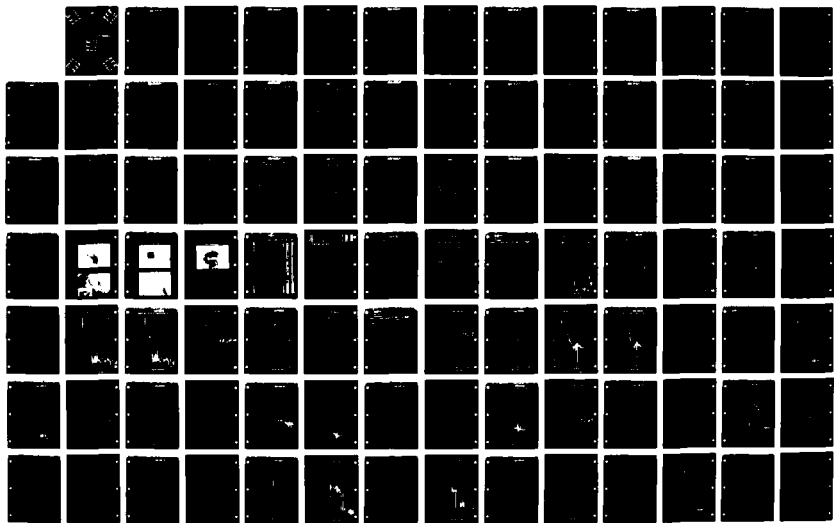
VOLUME 2 APPENDICES A - J REVISION(U) MONTGOMERY

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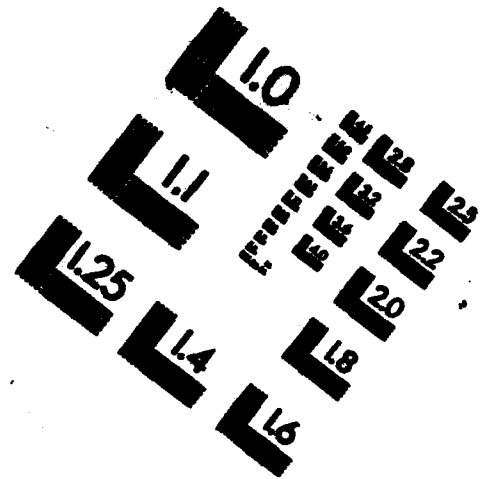
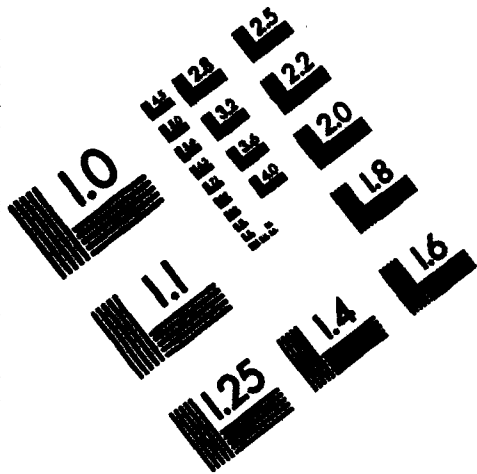




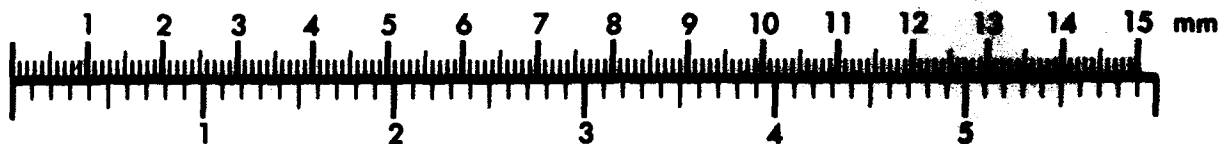
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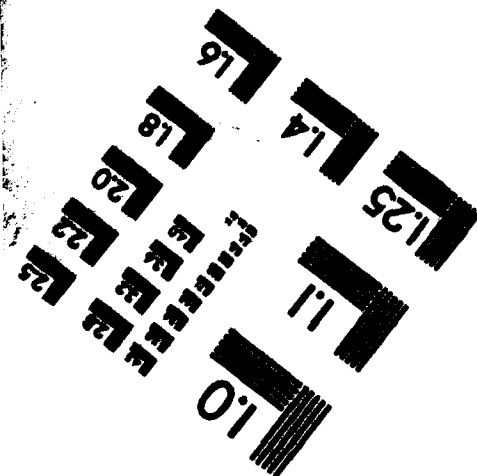
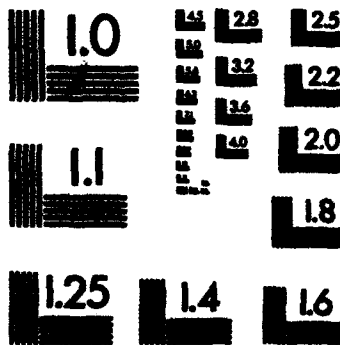
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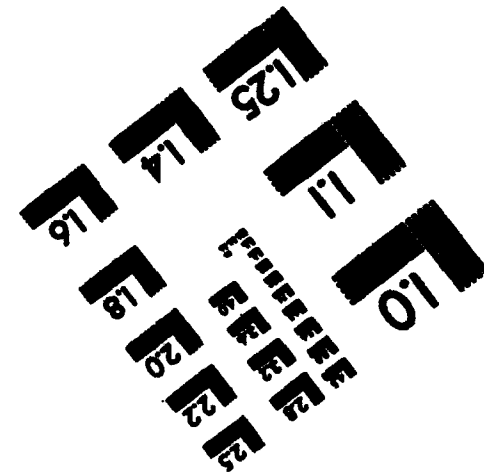
Centimeter



Inches



MANUFACTURED TO AIM STANDARDS  
BY APPLIED IMAGE, INC.



INTERNAL IGNITION TEST  
PROJECT 01-8132-001

TEST NO. 13

DATE 9-24-92

SOIL SAMPLE NO. SB-01-002

TEMPERATURE 89

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 14

DATE 9-24-92

SOIL SAMPLE NO. SB-DI-002

TEMPERATURE 89

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:



EXPLOSION DETECTION TEST  
PROJECT 01-5132-001

TEST NO. 15

DATE 9-25-92

SOIL SAMPLE NO. EP-01-087-0-1'

TEMPERATURE 83

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 16

DATE 9-25-92

SOIL SAMPLE NO. EP-01-087-0-1'

TEMPERATURE 84

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

TEST NO. 17

DATE 9-25-92

SOIL SAMPLE NO. EP-D1-118-D-3

TEMPERATURE 84

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF ☐

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES ☐

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES ☐

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 18 DATE 9-25-92  
SOIL SAMPLE NO. EP-01-118-D-3' TEMPERATURE 86

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT   
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL LEAKAGE TEST  
PROJECT 01-5132-001

TEST NO. 19

DATE 9-25-92

SOIL SAMPLE NO. SB-D1-006-D-1

TEMPERATURE 90

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 20 DATE 9-25-92  
SOIL SAMPLE NO. SB-01-006-05-1' TEMPERATURE 91

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT   
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE ZACH

ADDITIONAL COMMENTS:

INTERNAL SENSATION TEST  
PROJECT 01-5732-001

TEST NO. 21

DATE 9-25-92

SOIL SAMPLE NO. EP-01-096-1-2'

TEMPERATURE 92

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 22 DATE 9-25-92  
SOIL SAMPLE NO. EP-01-096-1-2' TEMPERATURE 93 °

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT   
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:



INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 23

DATE 9-25-92

SOIL SAMPLE NO. EP-01-104 1-2'

TEMPERATURE 93

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 24

DATE 9-25-92

SOIL SAMPLE NO. EP-01-104 1-2'

TEMPERATURE 93

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 25 DATE 9-25-92  
SOIL SAMPLE NO. SS-19-002 0-2' TEMPERATURE 92

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT   
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 26 DATE 9-25-92  
SOIL SAMPLE NO. SS-19-002 0-.2' TEMPERATURE 92

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT   
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

TEST NO. 27

DATE 9-28-92

SOIL SAMPLE NO. EP-01-108

TEMPERATURE 82

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 28

DATE 9-28-92

SOIL SAMPLE NO. EP-01-108

TEMPERATURE 84

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL SENSATION TEST  
PROJECT 01-6122-001

TEST NO. 29 DATE 9-28-92  
SOIL SAMPLE NO. EP-01-042 2-3' TEMPERATURE 84

RESULTS

PIPE SPLIT NO ✓ YES      LENGTH OF SPLIT       
PIPE FRAGMENTED NO ✓ YES      NO. OF PIECES     

TOP CAP

DETACHED FROM PIPE NO ✓ YES       
FRAGMENTED NO ✓ YES      NO. OF PIECES     

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES       
FRAGMENTED NO ✓ YES      NO. OF PIECES     

OVERALL RESULT POSITIVE      NEGATIVE ✓

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 30 DATE 9-28-92  
SOIL SAMPLE NO. EP-01-042 2-3' TEMPERATURE 85

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT   
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL TOE, ZACH

ADDITIONAL COMMENTS:



INTERNAL LEAKAGE TEST  
PROJECT 81-5122-001

TEST NO. 31

DATE 9-28-92

SOIL SAMPLE NO. EP-01-100 2-3'

TEMPERATURE 87

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 32

DATE 9-28-92

SOIL SAMPLE NO. EP-01-100 2-3'

TEMPERATURE 90

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 33

DATE 9-28-92

SOIL SAMPLE NO. SB-01-004 0-1'

TEMPERATURE 88

RESULTS

PIPE SPLIT NO ✓ YES        LENGTH OF SPLIT       

PIPE FRAGMENTED NO ✓ YES        NO. OF PIECES       

TOP CAP

DETACHED FROM PIPE NO ✓ YES       

FRAGMENTED NO ✓ YES        NO. OF PIECES       

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES       

FRAGMENTED NO ✓ YES        NO. OF PIECES       

OVERALL RESULT POSITIVE        NEGATIVE ✓

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 34 DATE 9-28-92  
SOIL SAMPLE NO. SB-01-004 0-1' TEMPERATURE 89

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 35

DATE 9-28-92

SOIL SAMPLE NO. EP-01-113

TEMPERATURE 88

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 36

DATE 9-28-92

SOIL SAMPLE NO. EP-01-113

TEMPERATURE 89

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-8132-001

TEST NO. 37

DATE 9-28-92

SOIL SAMPLE NO. SB-01-008

TEMPERATURE 90

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 38

DATE 9-28-92

SOIL SAMPLE NO. SB-01-008

TEMPERATURE 90

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:



INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 39

DATE 9-28-92

SOIL SAMPLE NO. EP-DI-091 1-2'

TEMPERATURE 90

RESULTS

PIPE SPLIT NO ✓ YES        LENGTH OF SPLIT       

PIPE FRAGMENTED NO ✓ YES        NO. OF PIECES       

TOP CAP

DETACHED FROM PIPE NO ✓ YES       

FRAGMENTED NO ✓ YES        NO. OF PIECES       

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES       

FRAGMENTED NO ✓ YES        NO. OF PIECES       

OVERALL RESULT POSITIVE        NEGATIVE ✓

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 40 DATE 9-28-92  
SOIL SAMPLE NO. EP-01-091 1-2' TEMPERATURE 89

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT   
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5152-001

TEST NO. 41 DATE 9-29-92  
SOIL SAMPLE NO. EP-01-D25 3-3.5' TEMPERATURE 81

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT   
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 42 DATE 9-29-92

SOIL SAMPLE NO. EP-01-D25 3-3.5' TEMPERATURE 81

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL JUNCTION TEST  
PROJECT 81-5122-001

TEST NO. 43 DATE 9-29-92  
SOIL SAMPLE NO. EP-01-082 0-5' TEMPERATURE 82

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT   
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 44 DATE 9-29-92  
SOIL SAMPLE NO. EP-01-082 0.5' TEMPERATURE 84

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT   
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 45 DATE 9-29-92  
SOIL SAMPLE NO. EP-DI-045 3.5-4' TEMPERATURE 87

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT   
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 46 DATE 9-29-92  
SOIL SAMPLE NO. EP-D1-045 354 TEMPERATURE 89

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE ZACH

ADDITIONAL COMMENTS:



OUTSIDE BURSTING TEST  
PROJECT BT-5102-001

TEST NO. 47 DATE 9-29-92  
SOIL SAMPLE NO. EP-01-034 1.5-5' TEMPERATURE 89

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT   
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 48 DATE 9-29-92  
SOIL SAMPLE NO. EP-D1-D34 45-5' TEMPERATURE 89

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT   
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐  
FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL Joe, 2 Ach

ADDITIONAL COMMENTS:

TEST NO. 49

DATE 9-29-92

SOIL SAMPLE NO. SB-D1-003

TEMPERATURE 90

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 50

DATE 9-29-92

SOIL SAMPLE NO. SB-01-003

TEMPERATURE 91

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-8132-001

TEST NO. 51

DATE 9-29-92

SOIL SAMPLE NO. EP-01-092 0-1' TEMPERATURE 92

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST  
PROJECT 01-5132-001

TEST NO. 52 DATE 9-29-92

SOIL SAMPLE NO. EP-01-092 0-1' TEMPERATURE 92

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

TOP CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

BOTTOM CAP

DETACHED FROM PIPE NO ☒ YES ☐

FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

## **GAP TESTS**

## GAP TEST

### 1. Fill Pipe with Soil and Install Velocity Probe

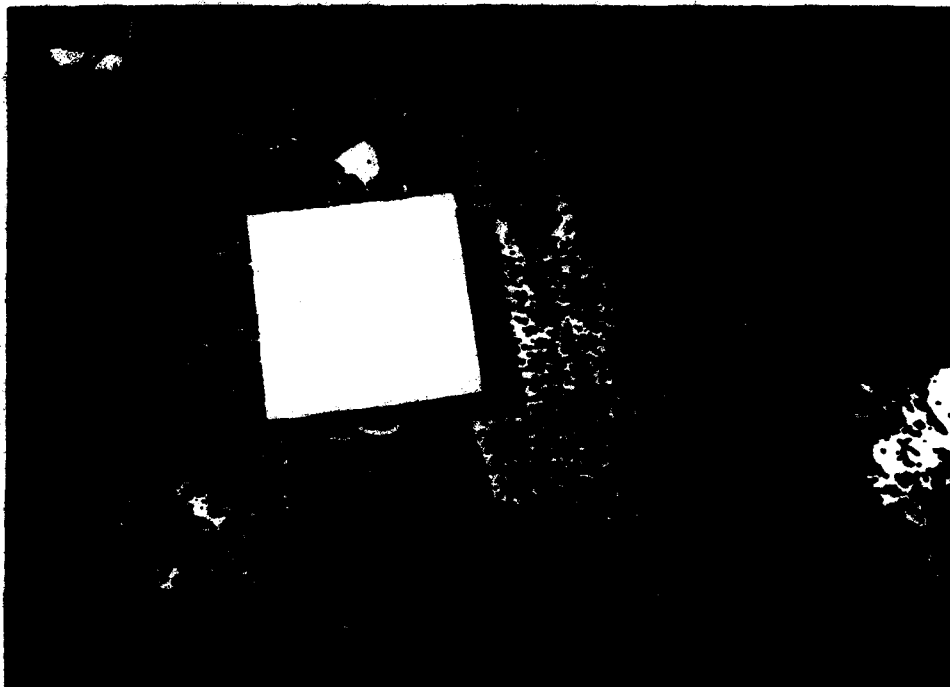


### 2. Install Detonator





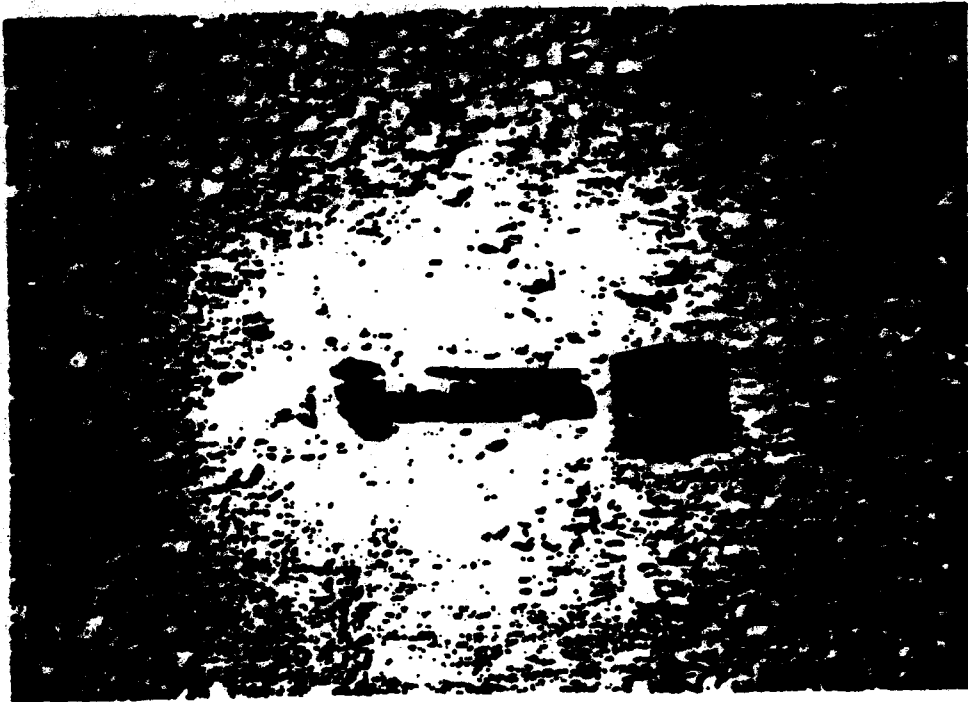
3. Top View of Pipe with Witness Plate



4. Wire-Up at Range



**5. Gap Test Pipe after Detonation**



13-23 OCTOBER 1982

SOIL SAMPLE	TEST NO.	SPLIT	PIPE FRAGMENTED	HOLE IN WITNESS PLATE	VELOCITY (FT/S)	VELOCITY TEND	OVERALL RESULT
SS-19-000-0-2'	53	NO	NO	NO	NO	NO	NEGATIVE
SS-19-000-0-2'	54	NO	NO	NO	6231	DECAYING	NEGATIVE
SS-19-000-0-2'	55	NO	NO	NO	8496	DECAYING	NEGATIVE
EP-01-009-0-1'	56	NO	NO	NO	5200	DECAYING	NEGATIVE
EP-01-009-0-1'	57	NO	NO	NO	5578	DECAYING	NEGATIVE
EP-01-056-4.5-5'	58	NO	NO	NO	4165	DECAYING	NEGATIVE
EP-01-056-4.5-5'	59	NO	NO	NO	2920	DECAYING	NEGATIVE
SB-01-005-0-1'	60	NO	NO	NO	4983	DECAYING	NEGATIVE
SB-01-005-0-1'	61	NO	NO	NO	5682	DECAYING	NEGATIVE
SB-01-007	62	NO	NO	NO	3337	DECAYING	NEGATIVE
SB-01-007	63	NO	NO	NO	3788	DECAYING	NEGATIVE
SB-01-001	64	NO	NO	NO	3551	DECAYING	NEGATIVE
SB-01-001	65	NO	NO	NO	4735	DECAYING	NEGATIVE
SB-01-002	66	NO	NO	NO	2271	DECAYING	NEGATIVE
SB-01-002	67	NO	NO	NO	5510	DECAYING	NEGATIVE
EP-01-007-0-1'	68	NO	NO	NO	5787	DECAYING	NEGATIVE
EP-01-007-0-1'	69	NO	NO	NO	3626	DECAYING	NEGATIVE
EP-01-118-0-3'	70	NO	NO	NO	NO	NO	NEGATIVE
EP-01-118-0-3'	71	NO	NO	NO	7215	DECAYING	NEGATIVE
EP-01-118-0-3'	72	NO	NO	NO	7576	DECAYING	NEGATIVE
SB-01-006-0-1'	73	NO	NO	NO	3106	DECAYING	NEGATIVE
SB-01-006-0-1'	74	NO	NO	NO	6729	DECAYING	NEGATIVE
EP-01-096-1-2'	75	NO	NO	NO	3235	DECAYING	NEGATIVE
EP-01-096-1-2'	76	NO	NO	NO	2673	DECAYING	NEGATIVE
EP-01-104-1-2'	77	NO	NO	NO	4583	DECAYING	NEGATIVE
EP-01-104-1-2'	78	NO	NO	NO	6313	DECAYING	NEGATIVE
SS-19-002-0-2'	79	NO	NO	NO	NO	DECAYING	NEGATIVE
EP-01-108	80	NO	NO	NO	1786	DECAYING	NEGATIVE
EP-01-108	81	NO	NO	NO	4117	DECAYING	NEGATIVE
EP-01-042-2-3'	82	NO	NO	NO	2140	DECAYING	NEGATIVE
EP-01-042-2-3'	83	NO	NO	NO	2817	DECAYING	NEGATIVE
EP-01-106-2-3'	84	NO	NO	NO	1884	DECAYING	NEGATIVE
EP-01-106-2-3'	85	NO	NO	NO	NO	NO	NEGATIVE
EP-01-106-2-3'	86	NO	NO	NO	NO	NO	NEGATIVE
EP-01-106-2-3'	87	NO	NO	NO	NO	NO	NEGATIVE
EP-01-109-2-3'	88	NO	NO	NO	3729	DECAYING	NEGATIVE
SB-01-004-0-1'	89	NO	NO	NO	6313	DECAYING	NEGATIVE
SB-01-004-0-1'	90	NO	NO	NO	4719	DECAYING	NEGATIVE
EP-01-113	91	NO	NO	NO	6313	DECAYING	NEGATIVE
EP-01-113	92	NO	NO	NO	2794	DECAYING	NEGATIVE
SB-01-008	93	NO	NO	NO	6829	DECAYING	NEGATIVE
SB-01-008	94	NO	NO	NO	6784	DECAYING	NEGATIVE
EP-01-091-1-2'	95	NO	NO	NO	3824	DECAYING	NEGATIVE
EP-01-091-1-2'	96	NO	NO	NO	1290	DECAYING	NEGATIVE
EP-01-025-3-3.5'	97	NO	NO	NO	2336	DECAYING	NEGATIVE
EP-01-025-3-3.5'	98	NO	NO	NO	6482	DECAYING	NEGATIVE
EP-01-002-0-0.5'	99	NO	NO	NO	6882	DECAYING	NEGATIVE
EP-01-002-0-0.5'	100	NO	NO	NO	2481	DECAYING	NEGATIVE
EP-01-045-3.5-4'	101	NO	NO	NO	8934	DECAYING	NEGATIVE

EP-01-045-3.5-4'	102	NO	NO	NO	2994	DECAYING	NEGATIVE
EP-01-034-4.5-5'	103	NO	NO	NO	3532	DECAYING	NEGATIVE
EP-01-034-4.5-5'	104	NO	NO	NO	3725	DECAYING	NEGATIVE
SS-01-003-0-1'	105	NO	NO	NO	4773	DECAYING	NEGATIVE
SS-01-003-0-1'	106	NO	NO	NO	4821	DECAYING	NEGATIVE
EP-01-002-0-1'	107	NO	NO	NO	5732	DECAYING	NEGATIVE
EP-01-002-0-1'	108	NO	NO	NO	6007	DECAYING	NEGATIVE

NOTE: SOIL SAMPLE SS-19-000-0-2' (TEST 79), NOT ENOUGH SOIL FOR TWO TESTS  
 NO= NO DATA, MALFUNCTION OF VELOCITY PROBE

GAP TEST  
PROJECT 01-5132-001

TEST NO. 53 DATE 10/13/92  
SOIL SAMPLE NO. SS-19-006-D-2' TEMPERATURE 93

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT ☐

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES ☐

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE ☐

VELOCITY: PEAK ☐ FPS

STABLE ☐ DECAYING ☐ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL Gray, Elvando, Jochey

ADDITIONAL COMMENTS:

NO DATA ON VELOCITY GRAPH, DELAY IN CAP CAUSED  
US TO MISS ON O-SCOPE.

GAP TEST  
PROJECT 01-6132-001

TEST NO. 54 DATE 10/13/02  
SOIL SAMPLE NO. SS-19-006-O-2' TEMPERATURE 92

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT ☐

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES ☐

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE ☐

VELOCITY: PEAK 6231 FPS

STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL Gray, Eduardo, Zacher

ADDITIONAL COMMENTS:

**DATA SHEET FOR  
GAS TEST**

**TEST NO 294**

**INSTRUMENTATION:**

TRANSDUCER	S/N	LOCATION	TAPE CHAN	CAL (V)	CAL EQ (PSI)	FULL SCALE GAIN	VOLTAGE
2	1	1	1	1.0	0.100E+04	1.0	1.0

**COMMENTS:**

---

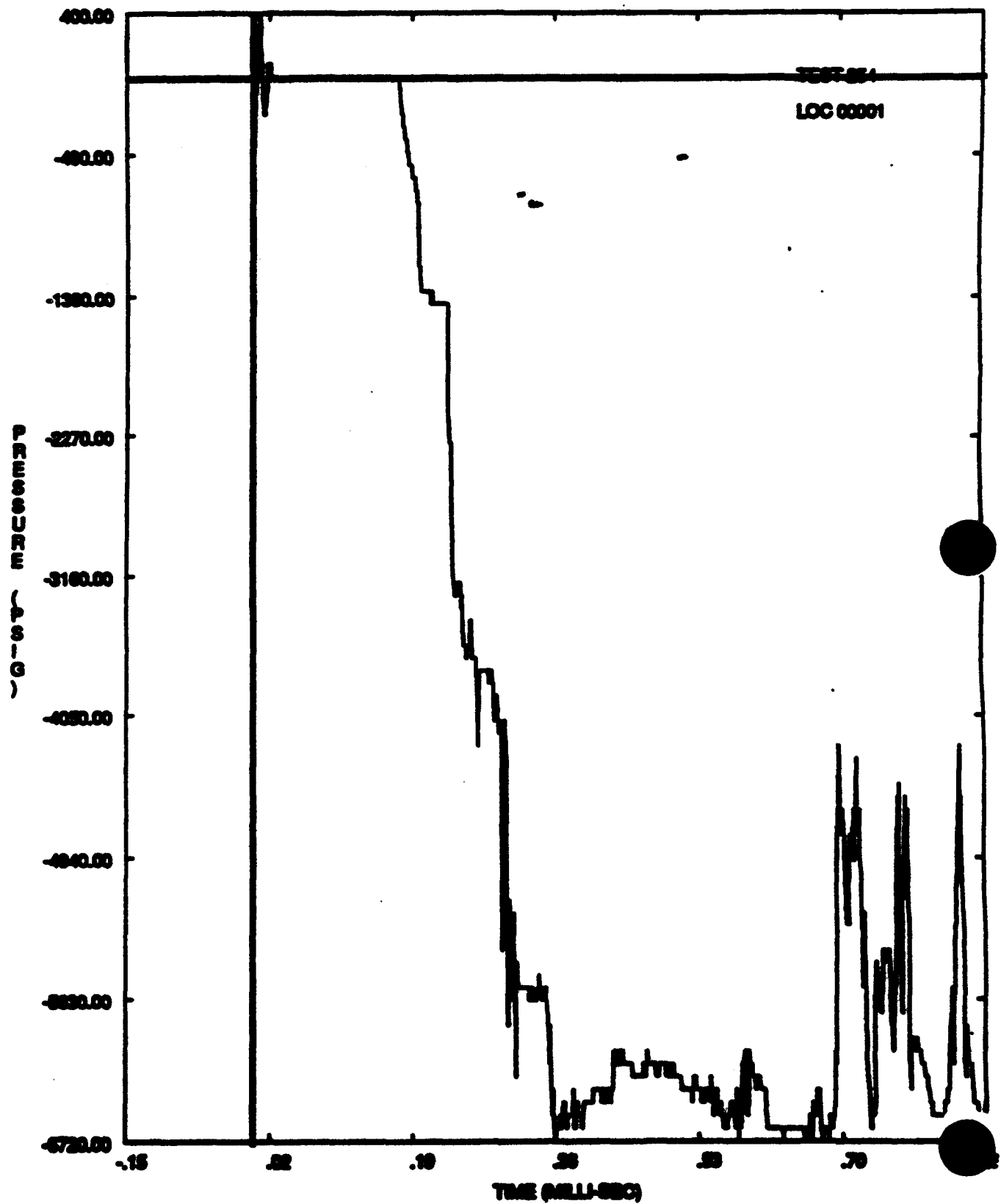
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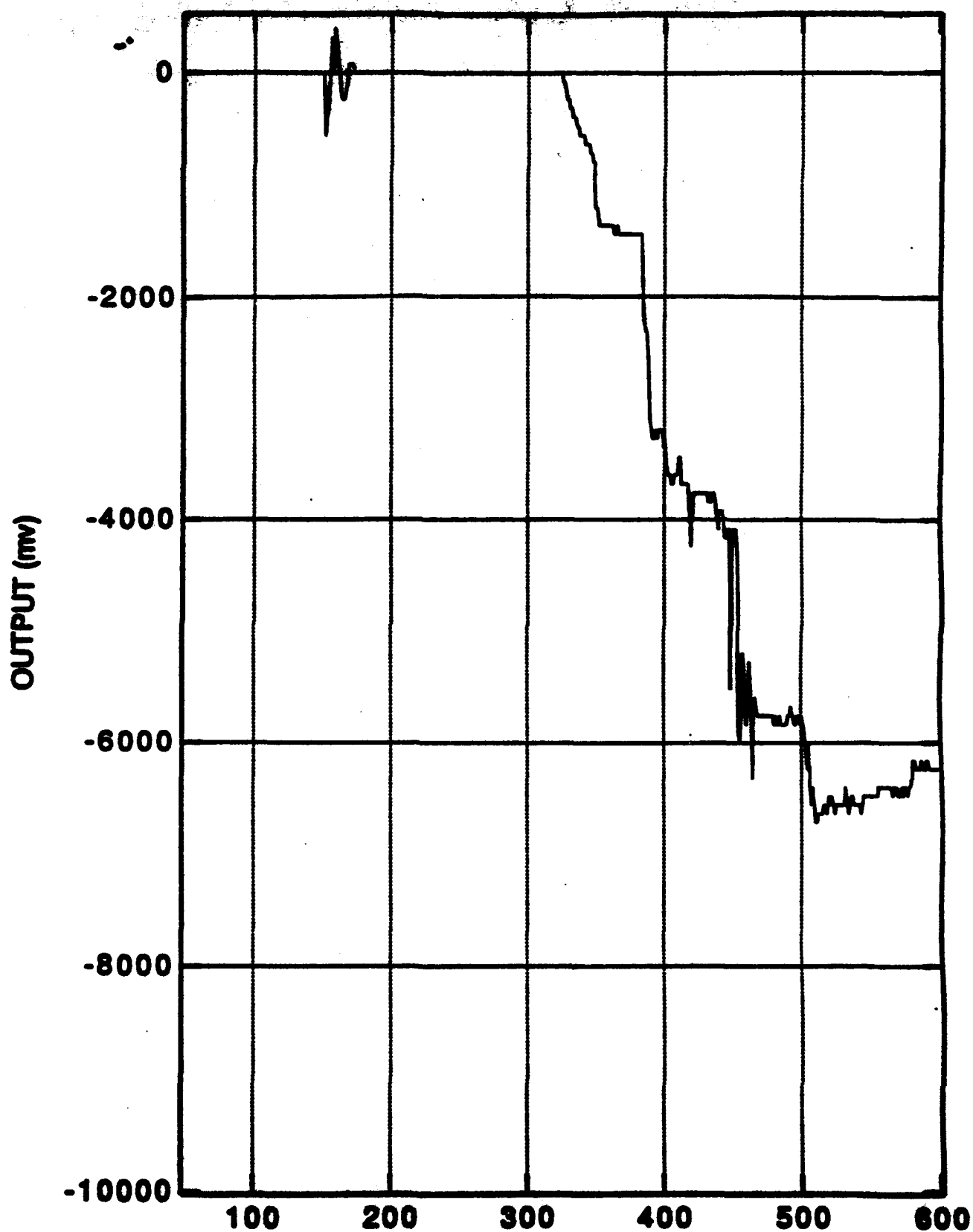
# GAP TEST



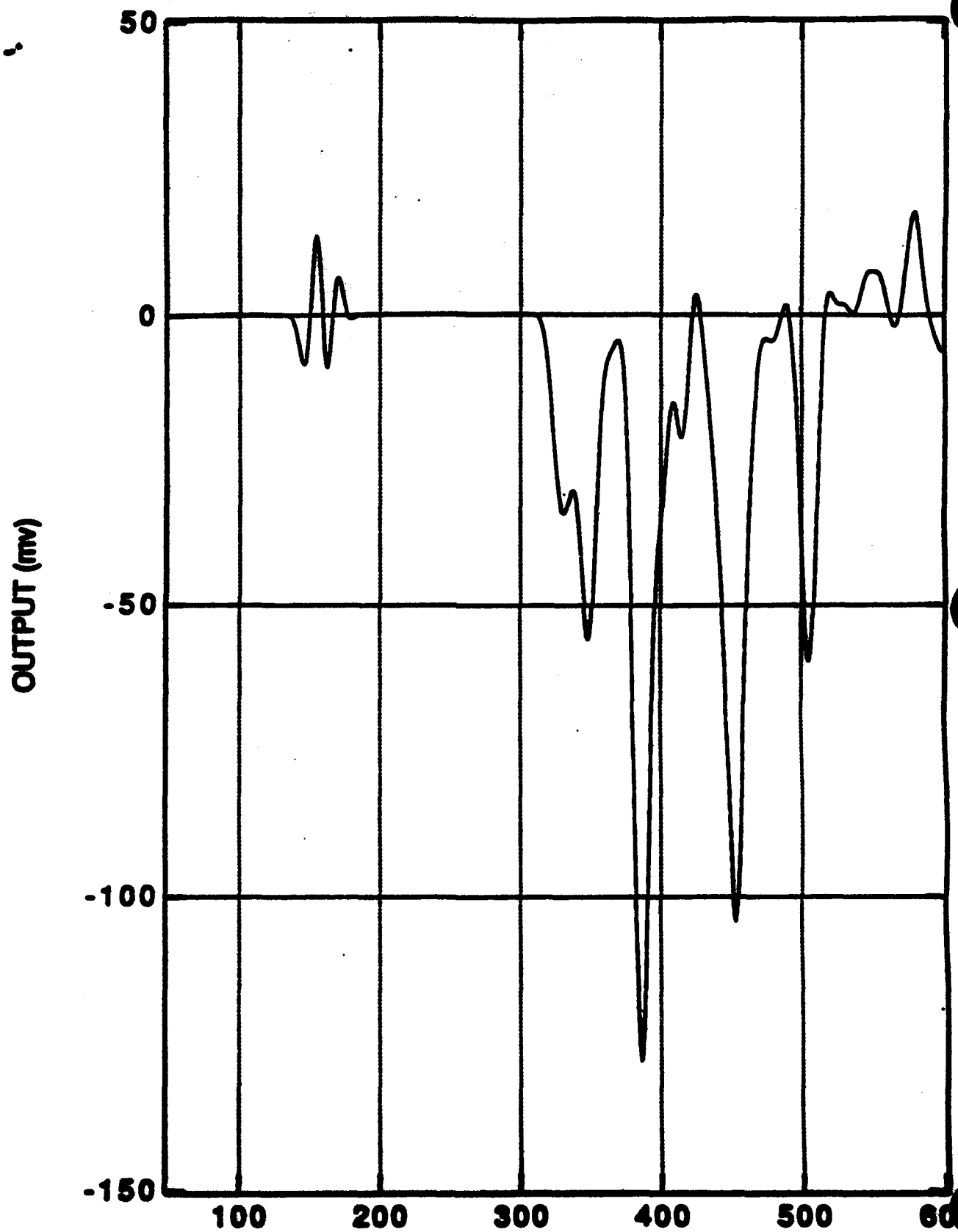
10/13/92



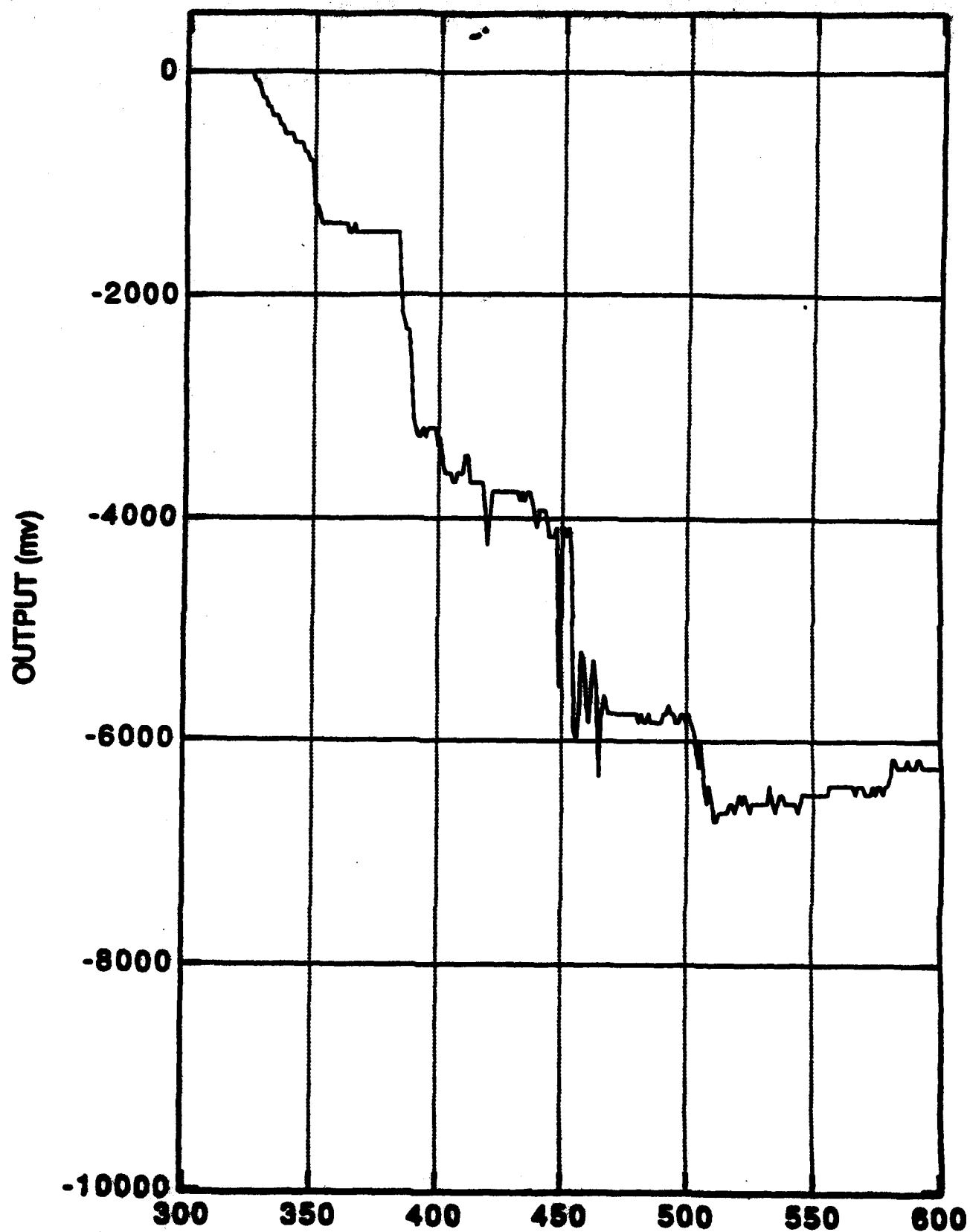
TEST 54



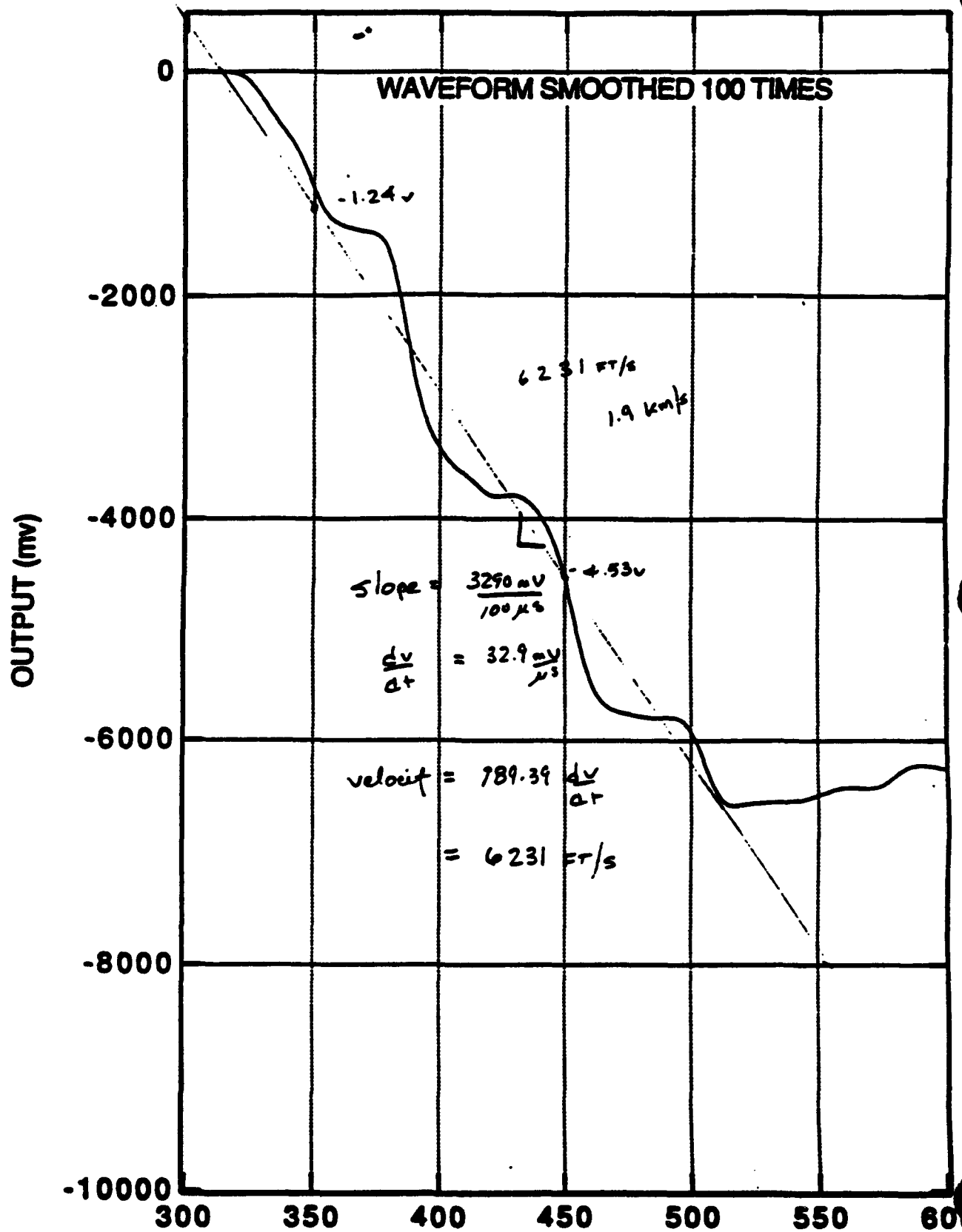
# TEST 54



# TEST 54



# TEST 54



GAP TEST  
PROJECT 01-5132-001

TEST NO. 55

DATE 10 / 2 / 52

SOIL SAMPLE NO. SS-19-006-D-3'

TEMPERATURE 72

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT ☐

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES ☐

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE ☐

VELOCITY: PEAK 5696 FPS

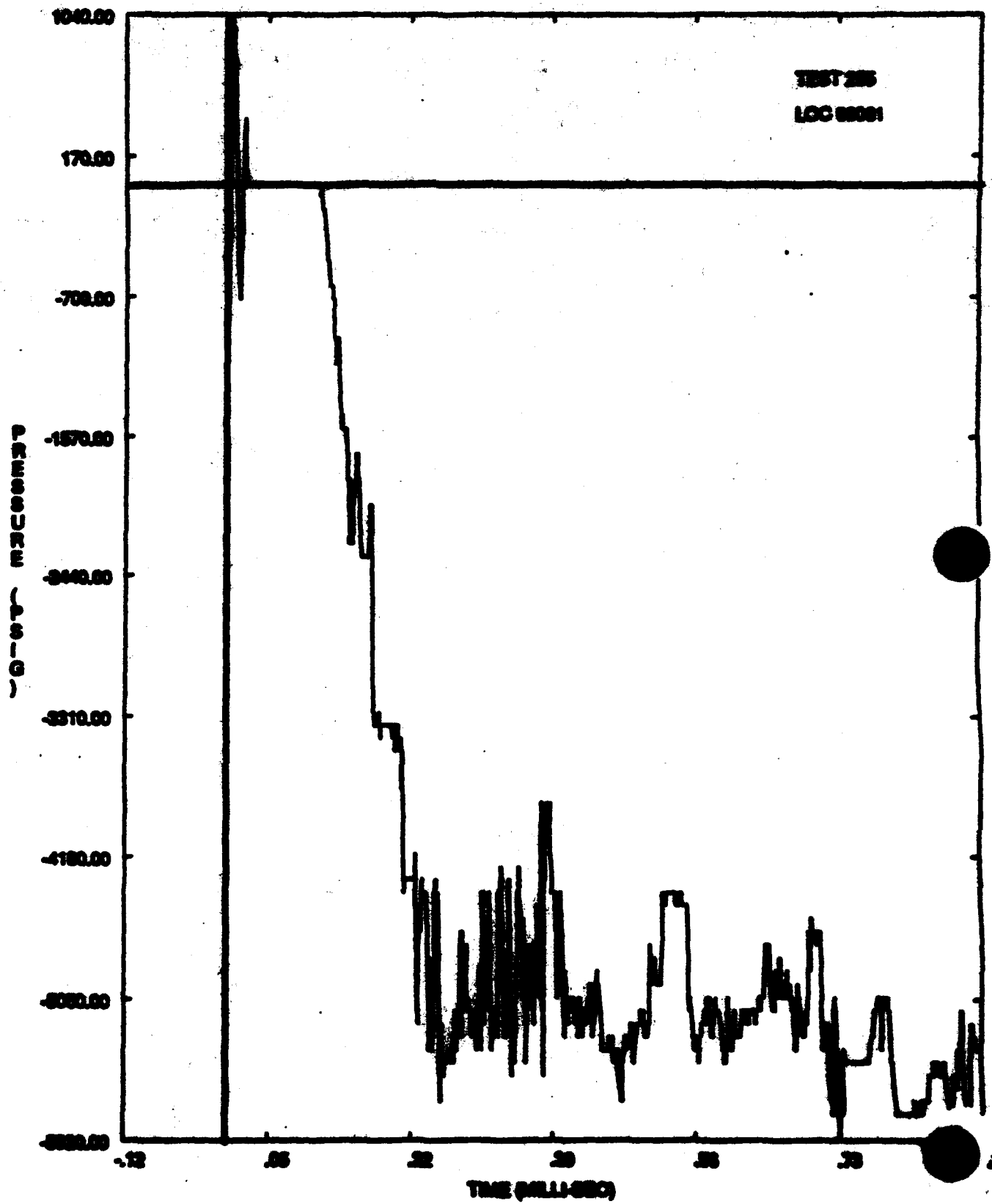
STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL Gray, Elvando, Zachary

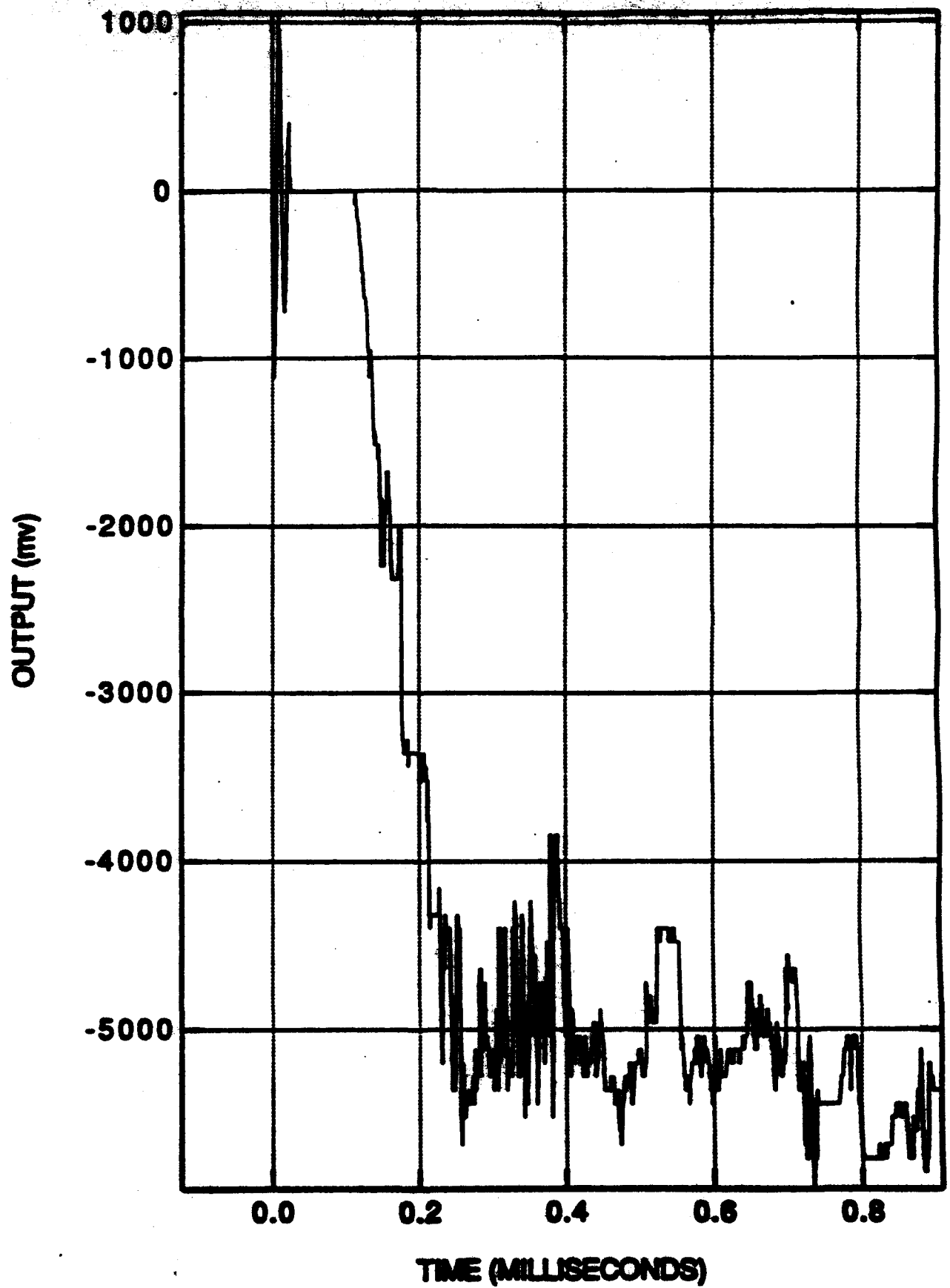
ADDITIONAL COMMENTS:

# GAP TEST

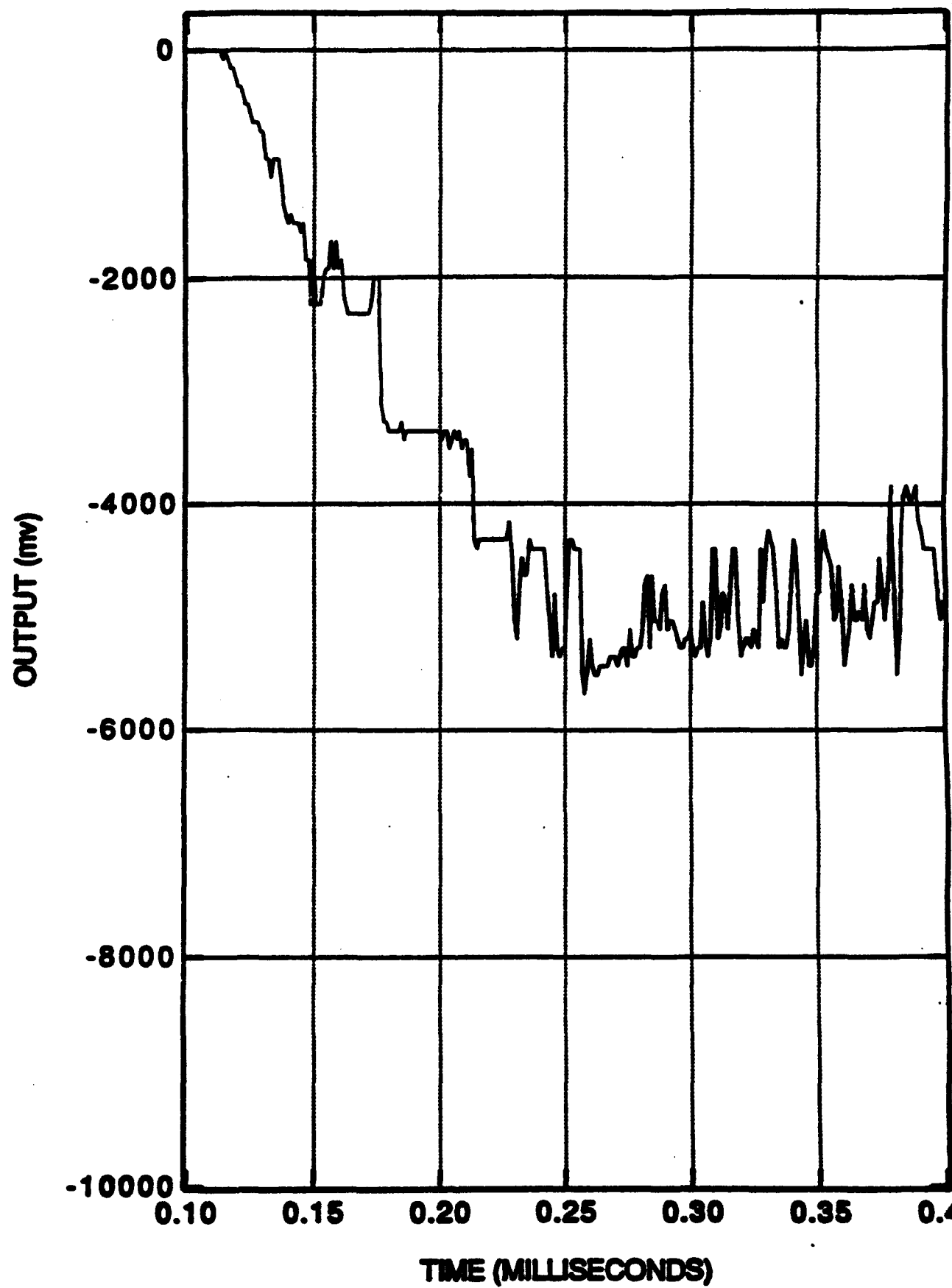


10/14/92

# GAP TEST 53

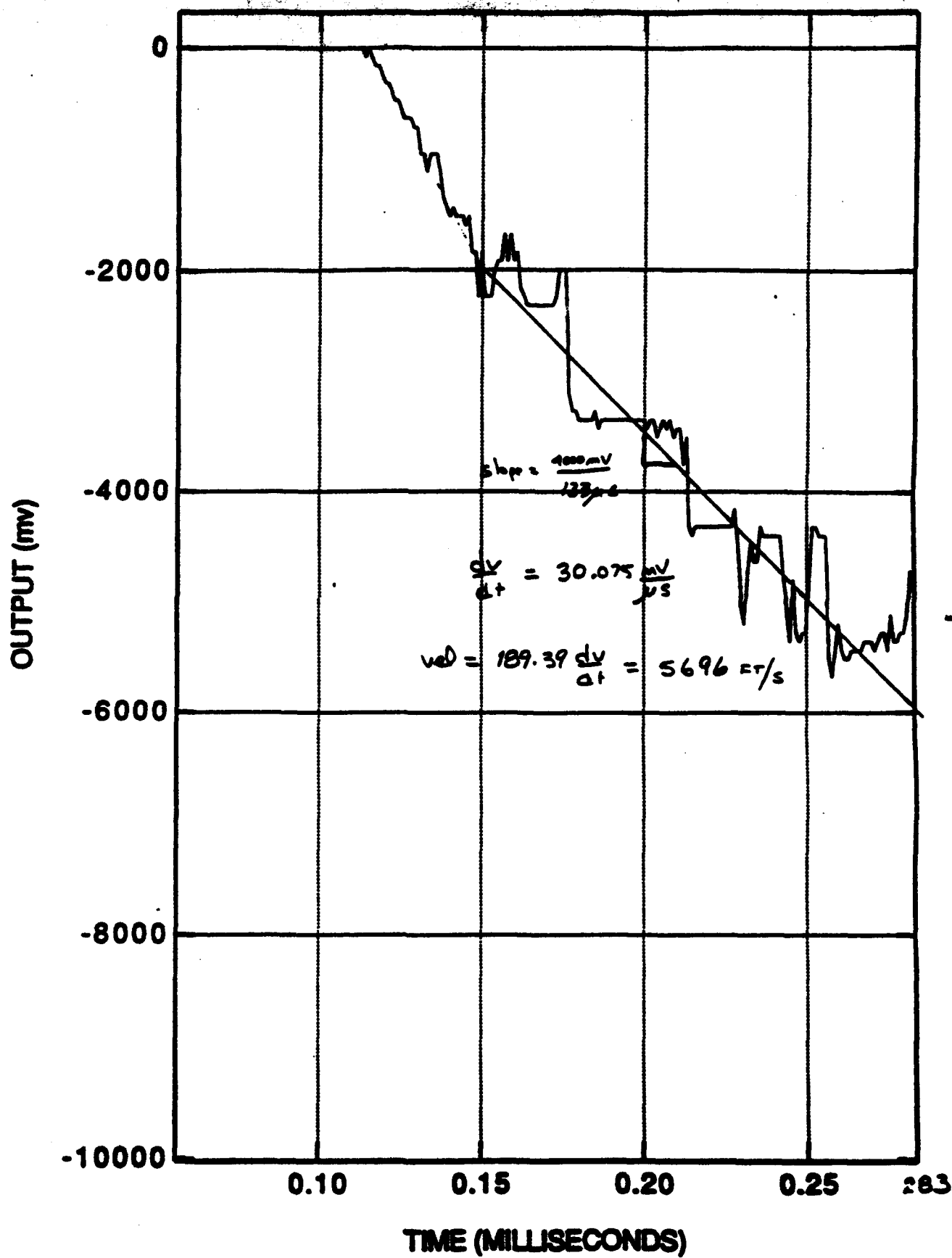


# GAP TEST 55





# GAP TEST 55



GAP TEST  
PROJECT 01-5132-001

TEST NO. 56

DATE 10/14/03

SOIL SAMPLE NO. EP-01-009-0-1'

TEMPERATURE 73

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT           

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES           

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE           

VELOCITY: PEAK 5208 FPS

STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☐

TEST PERSONNEL Gau, Elizabeth, Zochamp

ADDITIONAL COMMENTS:

DATA SHEET FOR  
GAP TEST

TEST NO 256

INSTRUMENTATION:

TRANSDUCER	S/N	LOCATION	TAPE CHAN	CAL (V)	CAL EQ (PSI)	FULL SCALE GAIN	VOLTAGE
2	1	1	1	1.0	0.100E+04	1.0	1.0

COMMENTS:

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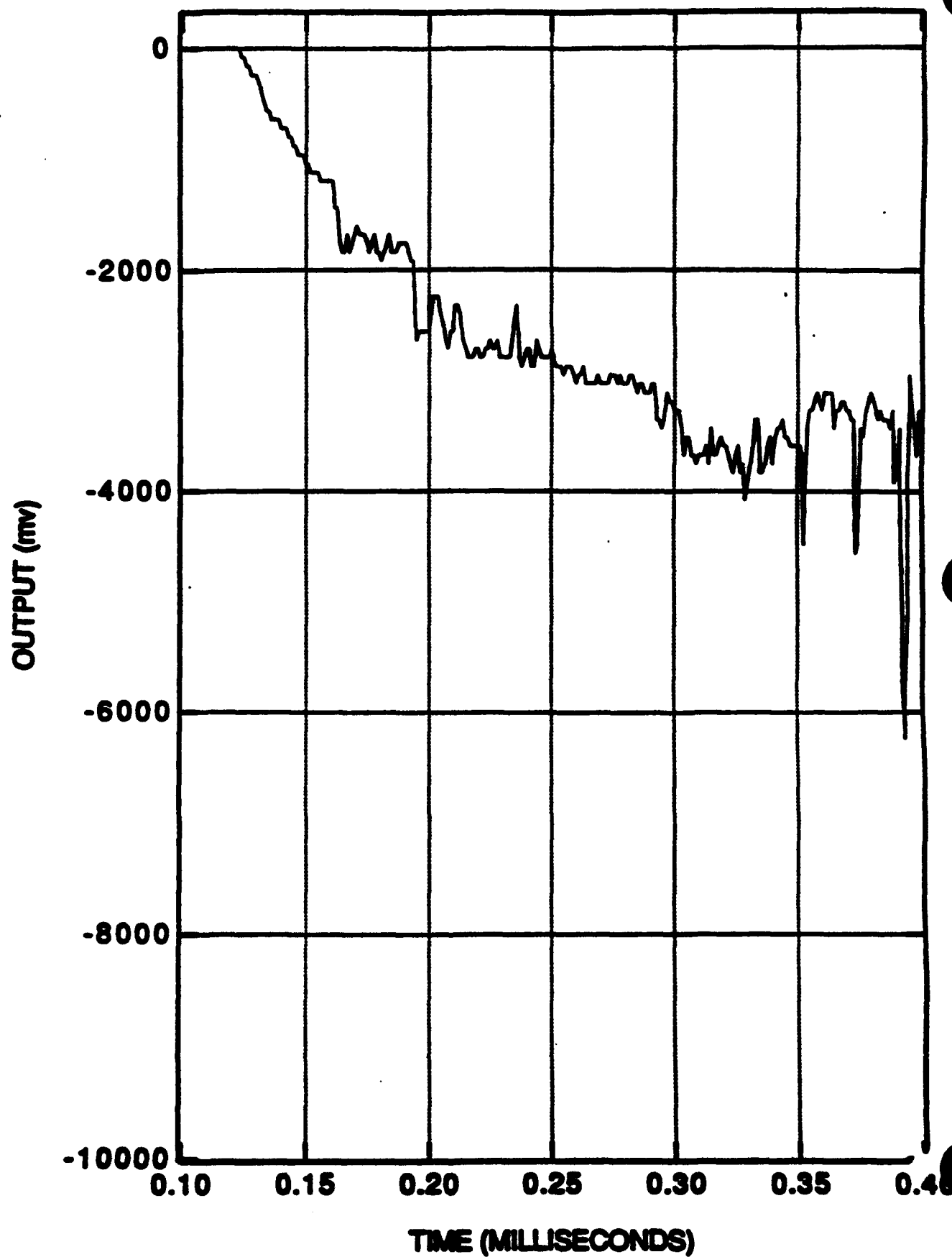
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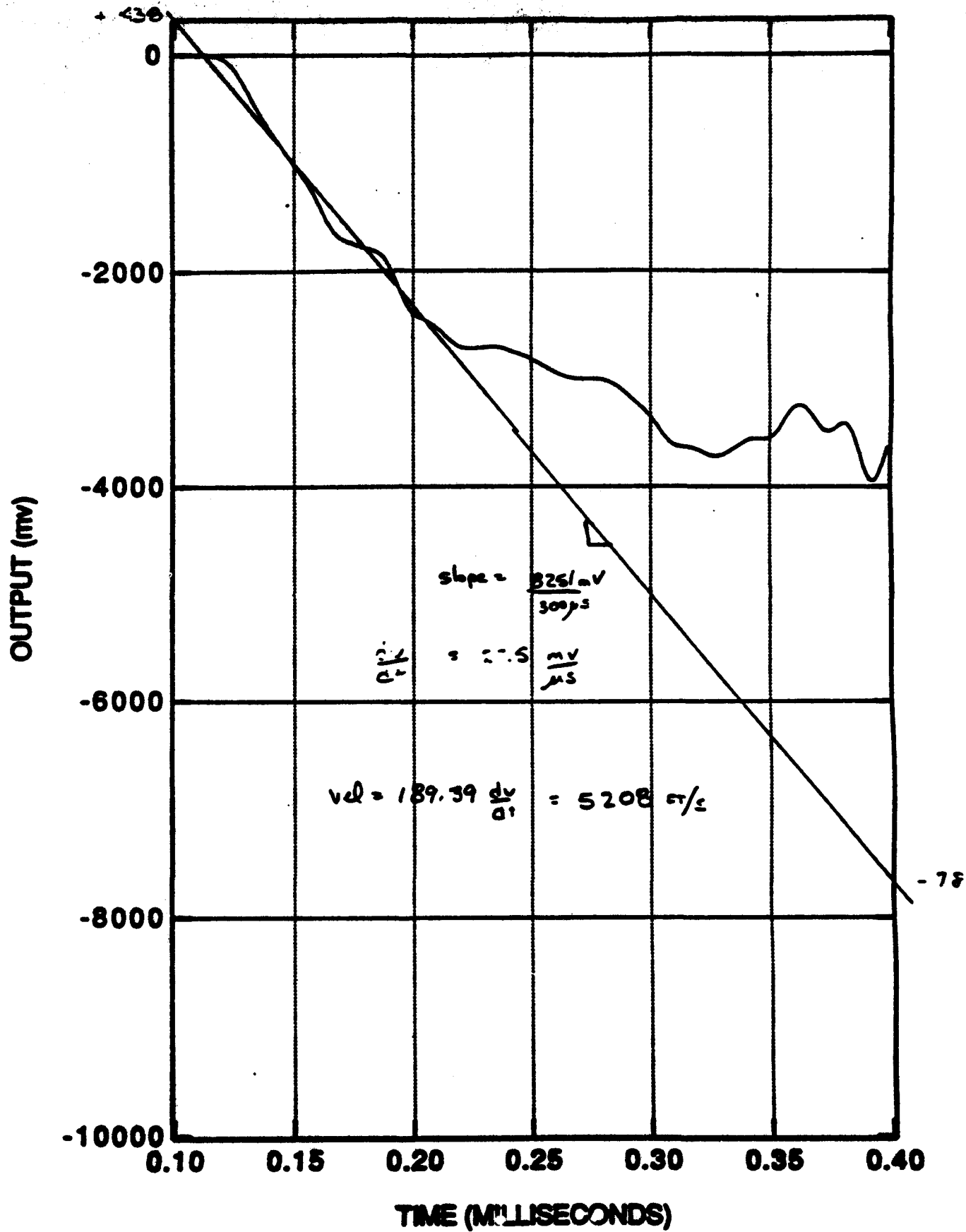
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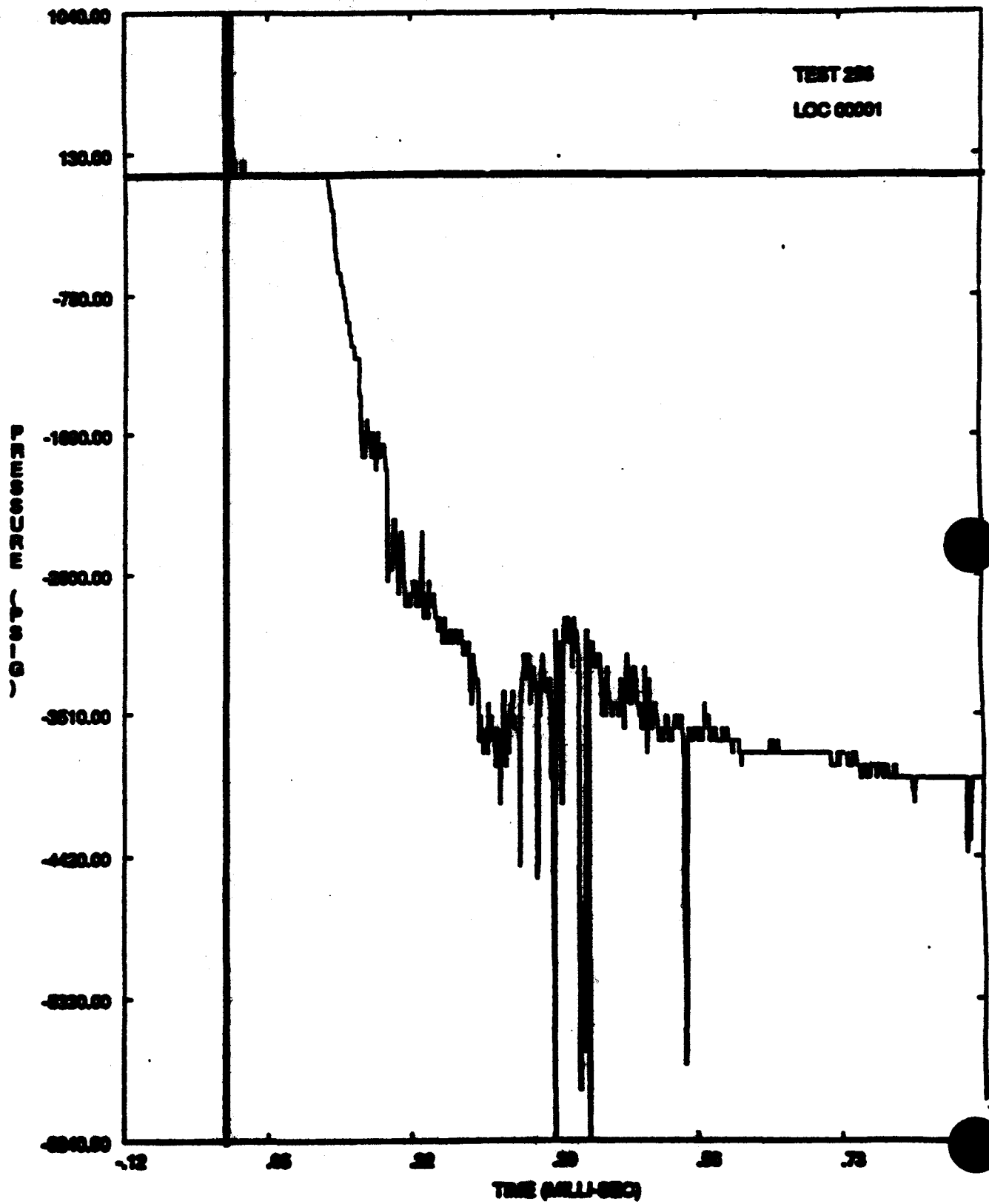
# GAP TEST 56



# GAP TEST 56

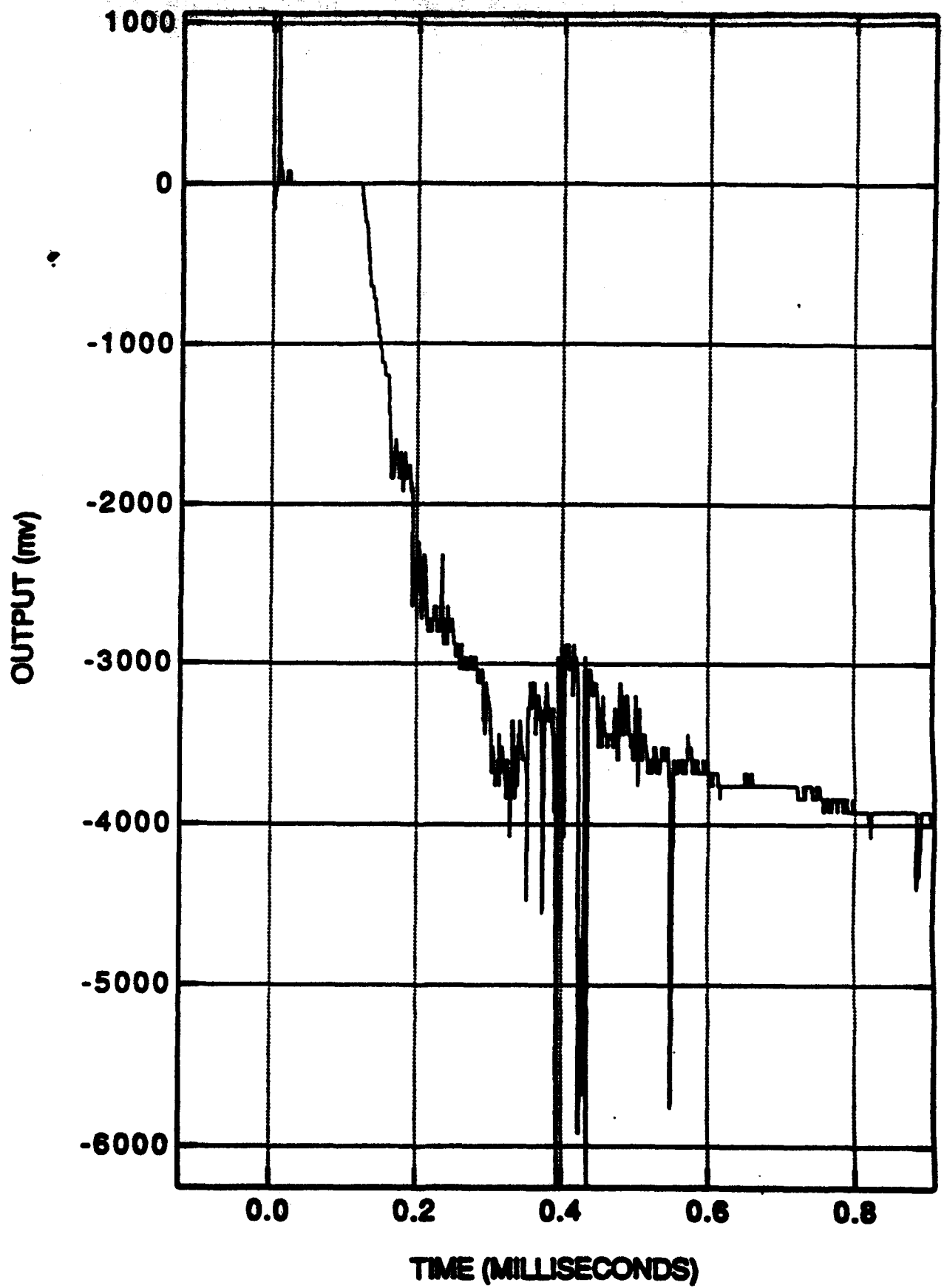


# GAP TEST



10/14/92

# GAP TEST 56



GAP TEST  
PROJECT 01-5132-001

TEST NO. 57 DATE 10/14/92  
SOIL SAMPLE NO. EP-01-089-0-1' TEMPERATURE 80

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT           

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES           

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE           

VELOCITY: PEAK 5978 FPS

STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL GRAV, ELIZANDO, Zachary

ADDITIONAL COMMENTS:



**DATA SHEET FOR  
GAS TEST**

**TEST NO 257**

**INSTRUMENTATION:**

TRANSDUCER	S/N	LOCATION	TAPE CHAN	CAL (V)	CAL EQ (PSI)	FULL SCALE GAIN	VOLTAGE
2	1	1	1	1.0	0.100E+04	1.0	1.0

**COMMENTS:**

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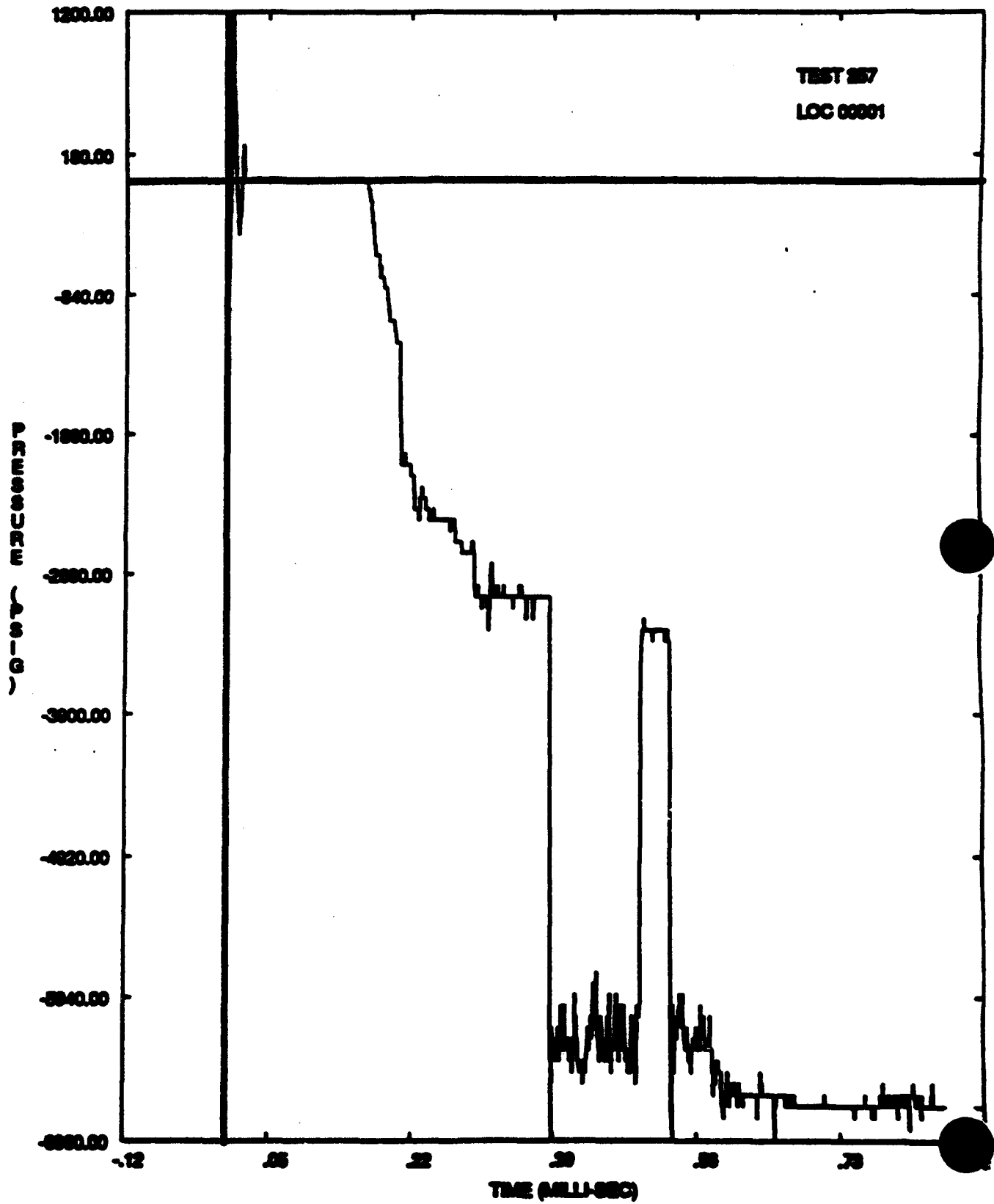
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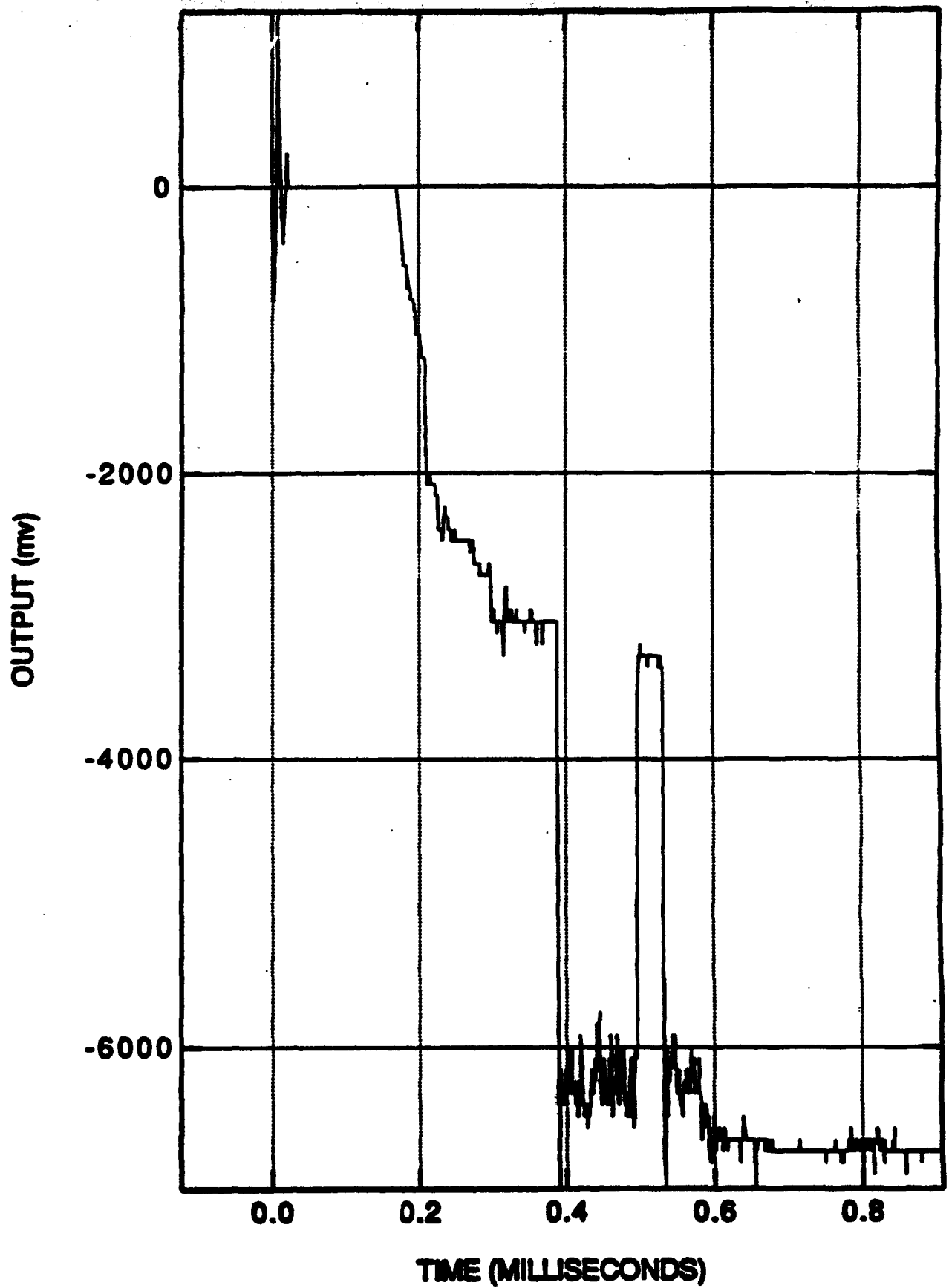
---

# GAP TEST

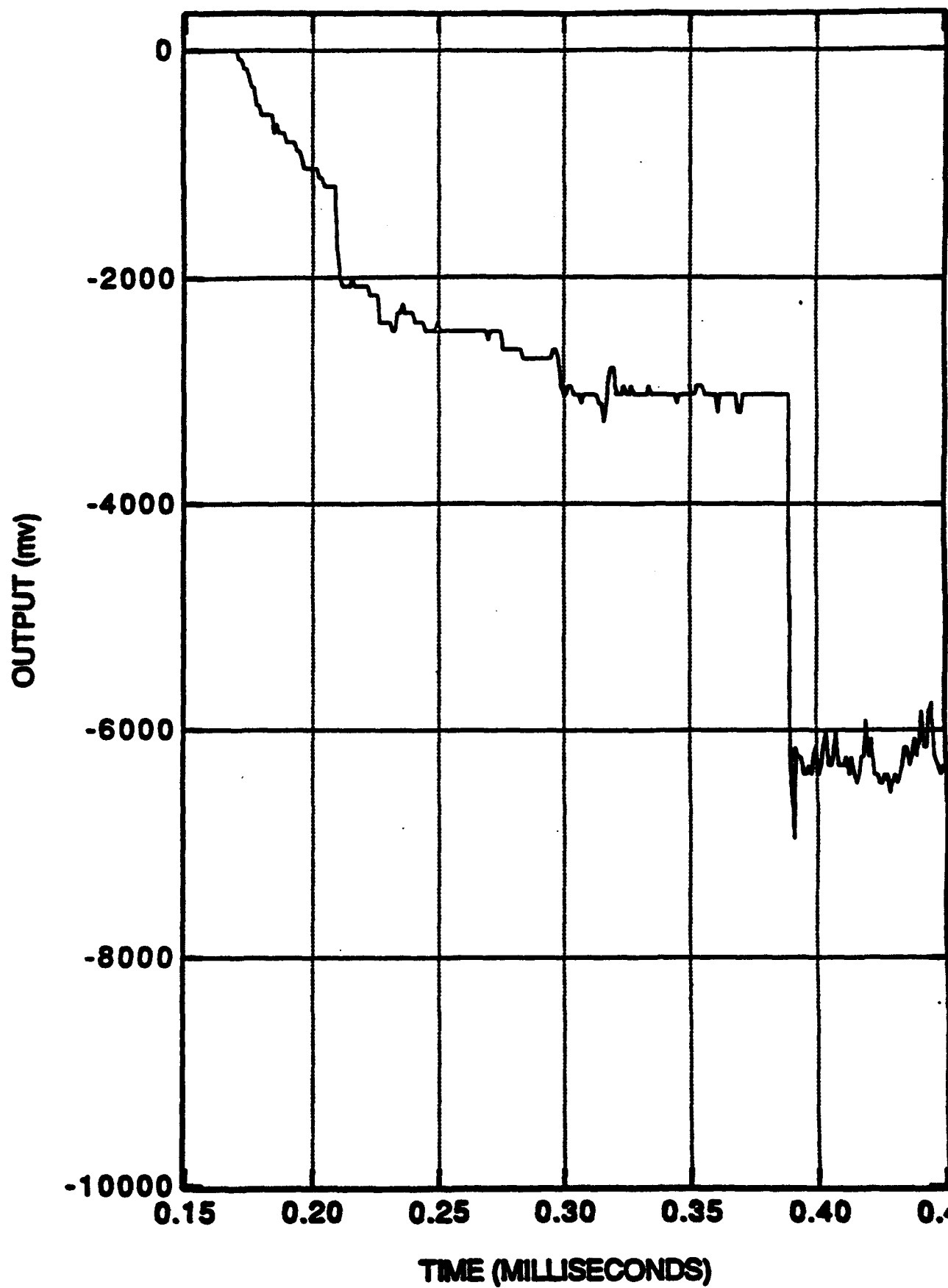


10/14/92

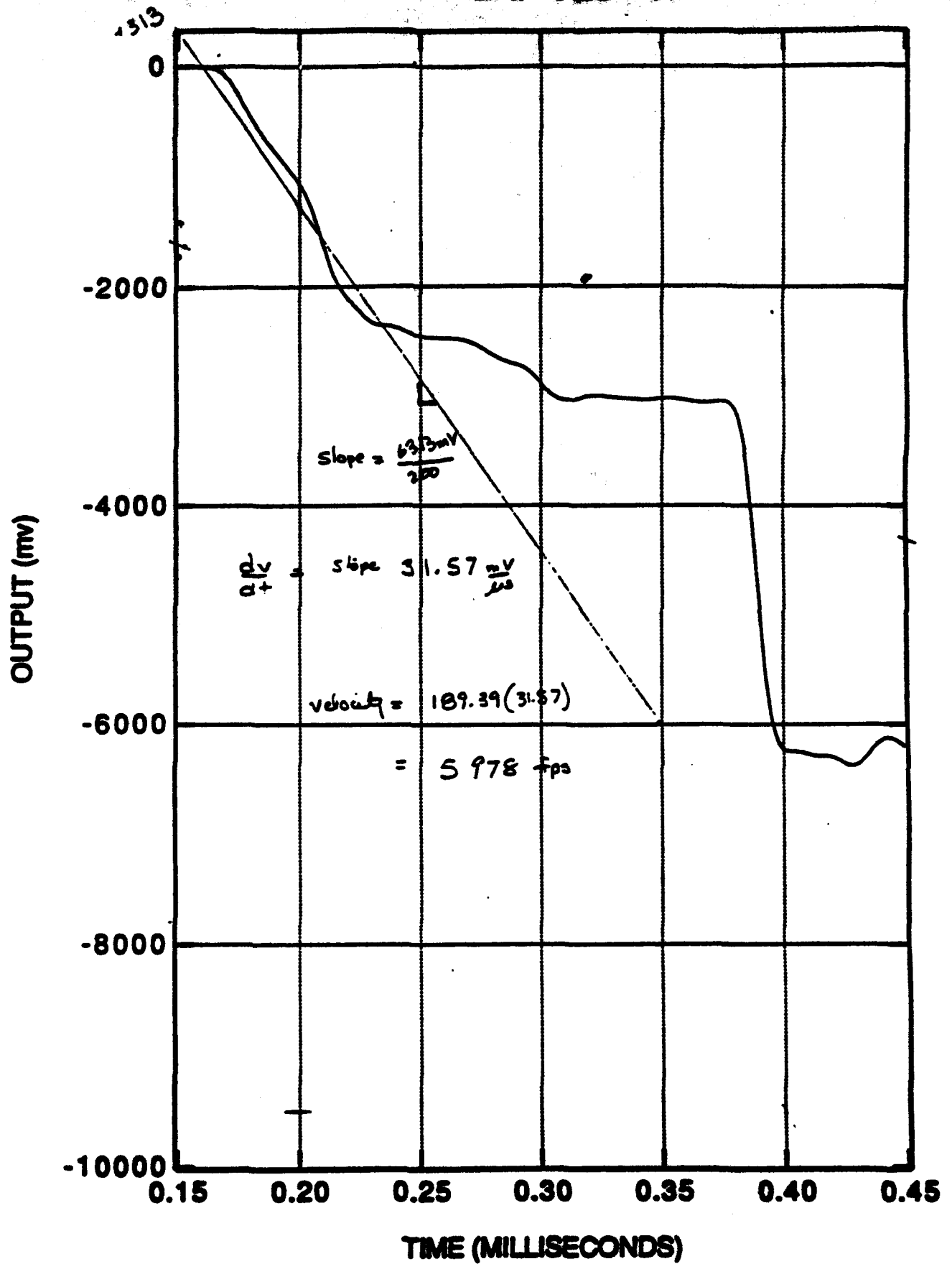
# GAP TEST 87



# GAP TEST 57



# GAP TEST 57



GAP TEST  
PROJECT 01-5132-001

TEST NO. 58 DATE 10/1/82

SOIL SAMPLE NO. EP-01-056 4.5-5' TEMPERATURE 89

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT ☐

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES ☐

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE ☐

VELOCITY: PEAK 4166 FPS

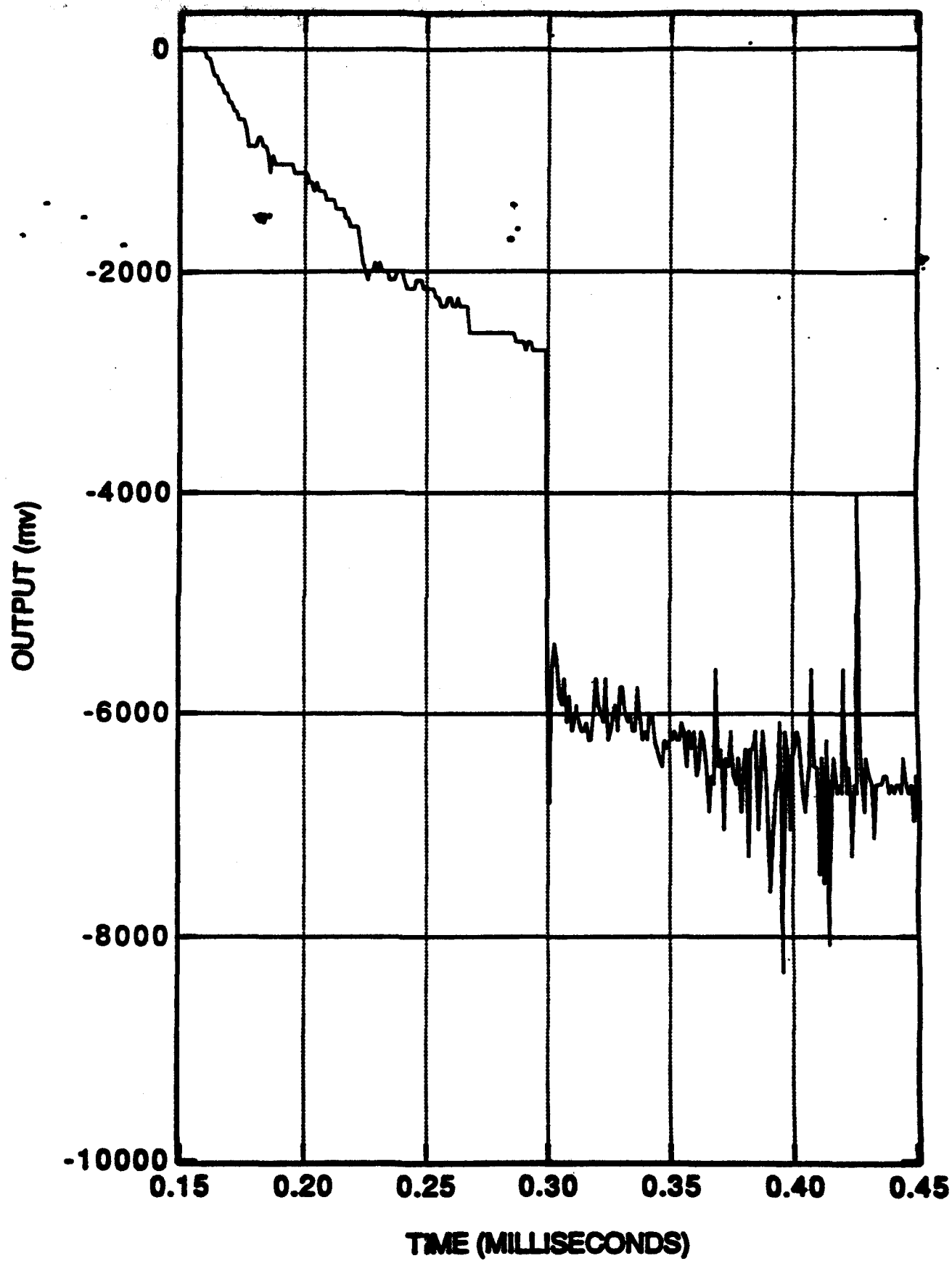
STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

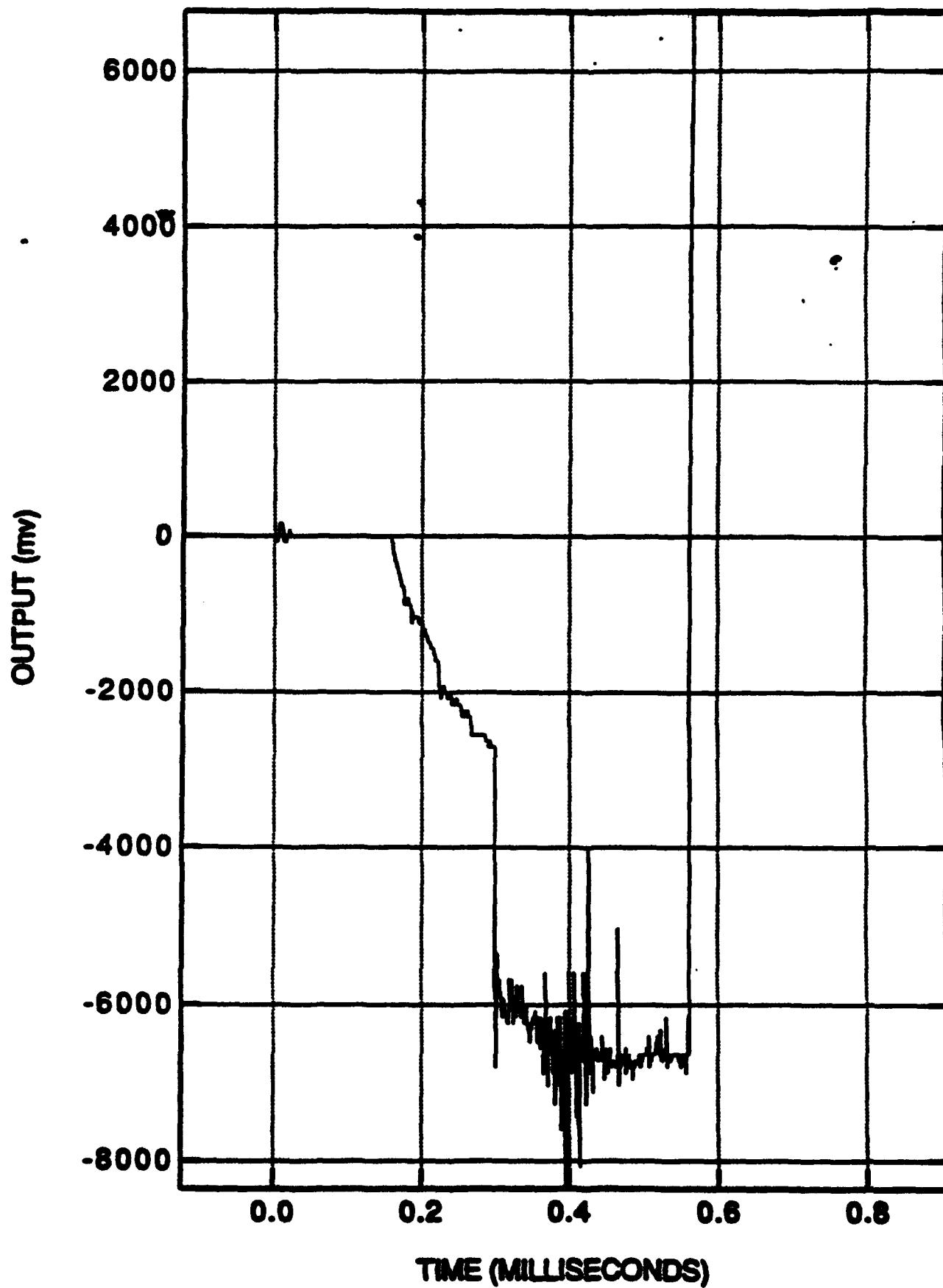
TEST PERSONNEL Gray, Elzardo, Zuckey

ADDITIONAL COMMENTS:

# GAP TEST 58

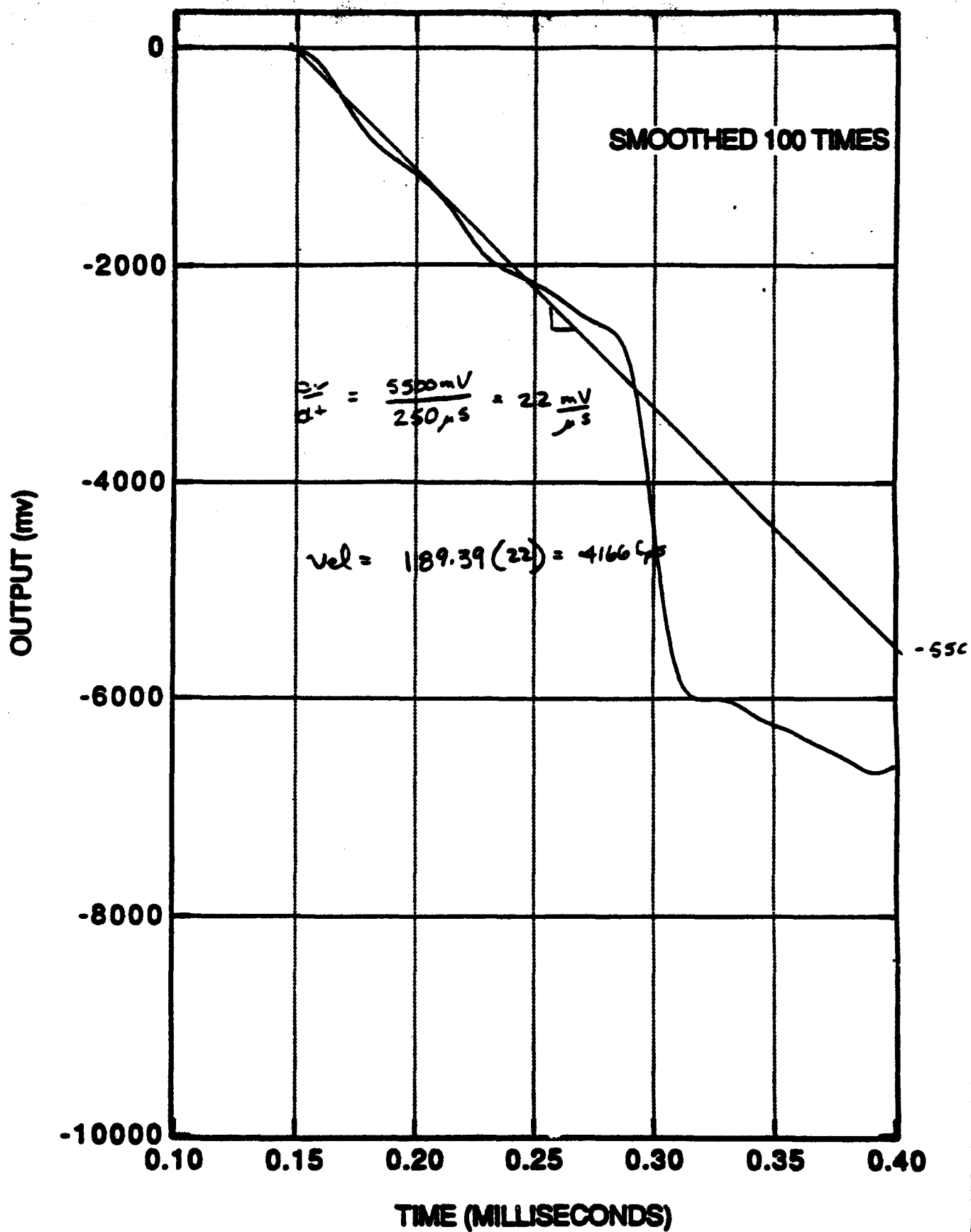


# GAP TEST 58





# GAP TEST 58

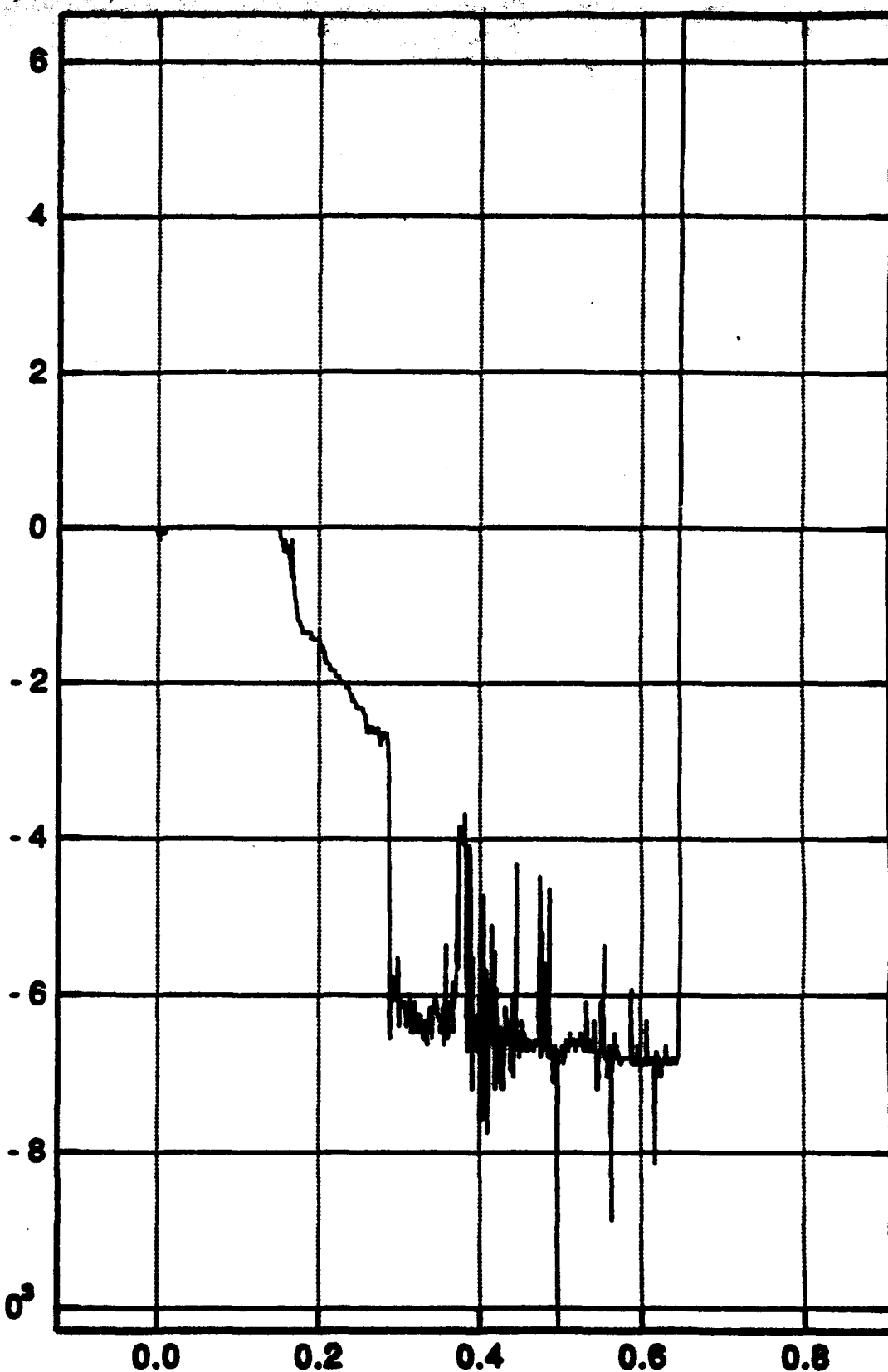




# GAP TEST 50

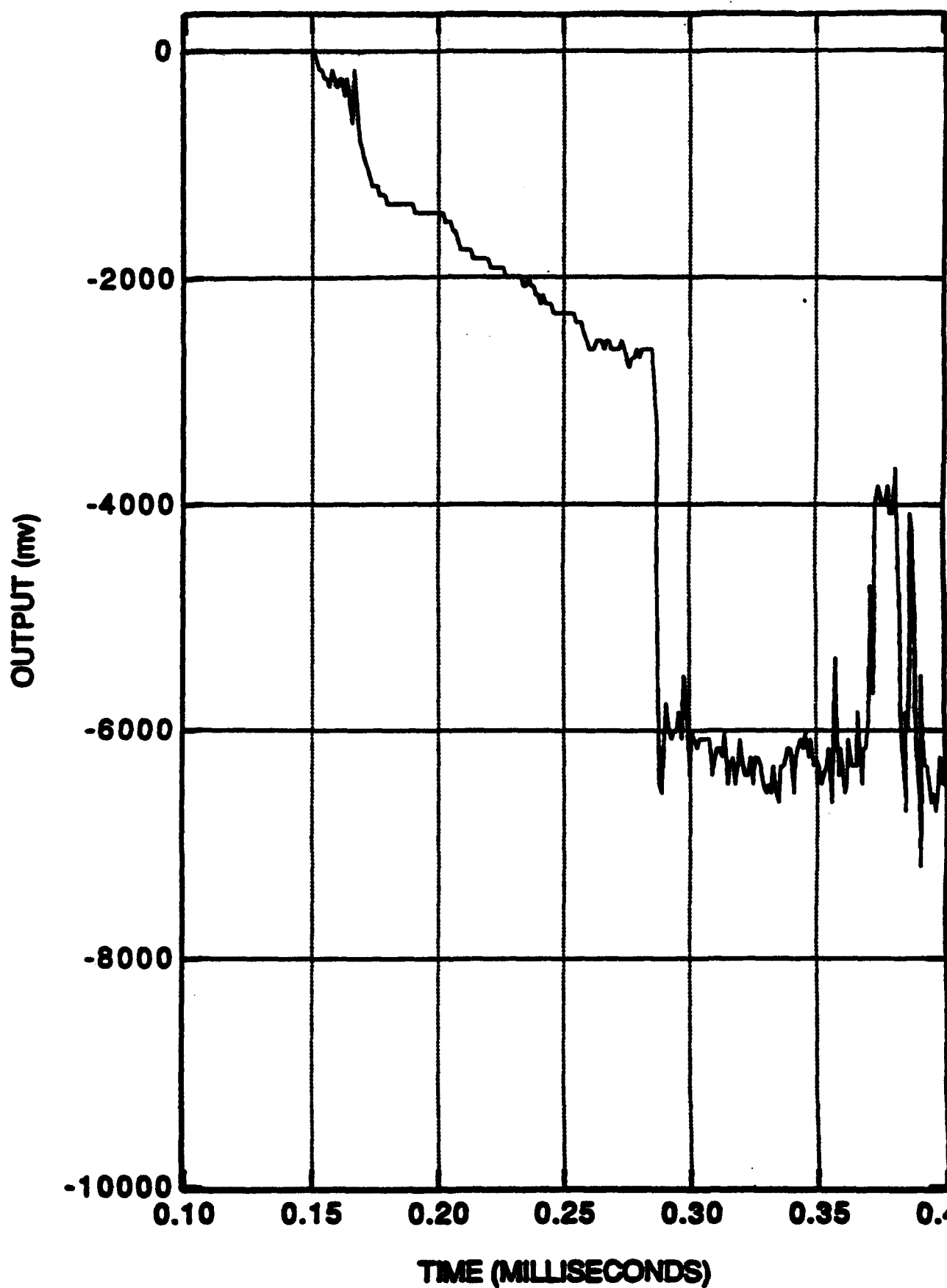
OUTPUT (mv)

$-10 \times 10^3$

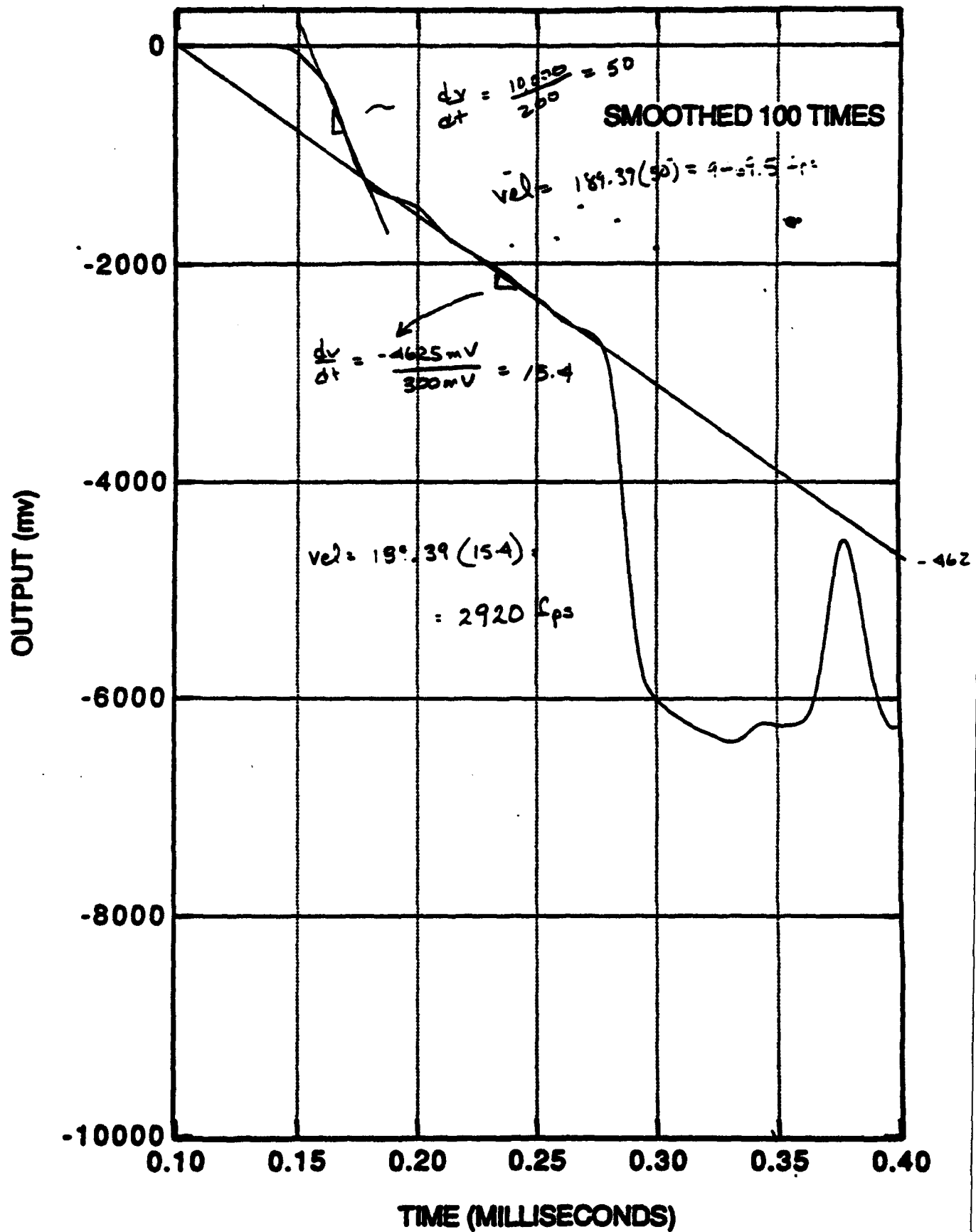


TIME (MILLISECONDS)

# GAP TEST 59



# GAP TEST 59



GAP TEST  
PROJECT 01-5132-001

TEST NO. 60 DATE 10/14/92  
SOIL SAMPLE NO. SB-01-005-0-1 TEMPERATURE 92

RESULTS

PIPE SPLIT NO    YES    LENGTH OF SPLIT   

PIPE FRAGMENTED NO    YES    NO. OF PIECES   

HOLE PUNCHED IN WITNESS PLATE NO    YES    SIZE   

VELOCITY: PEAK 4983 FPS

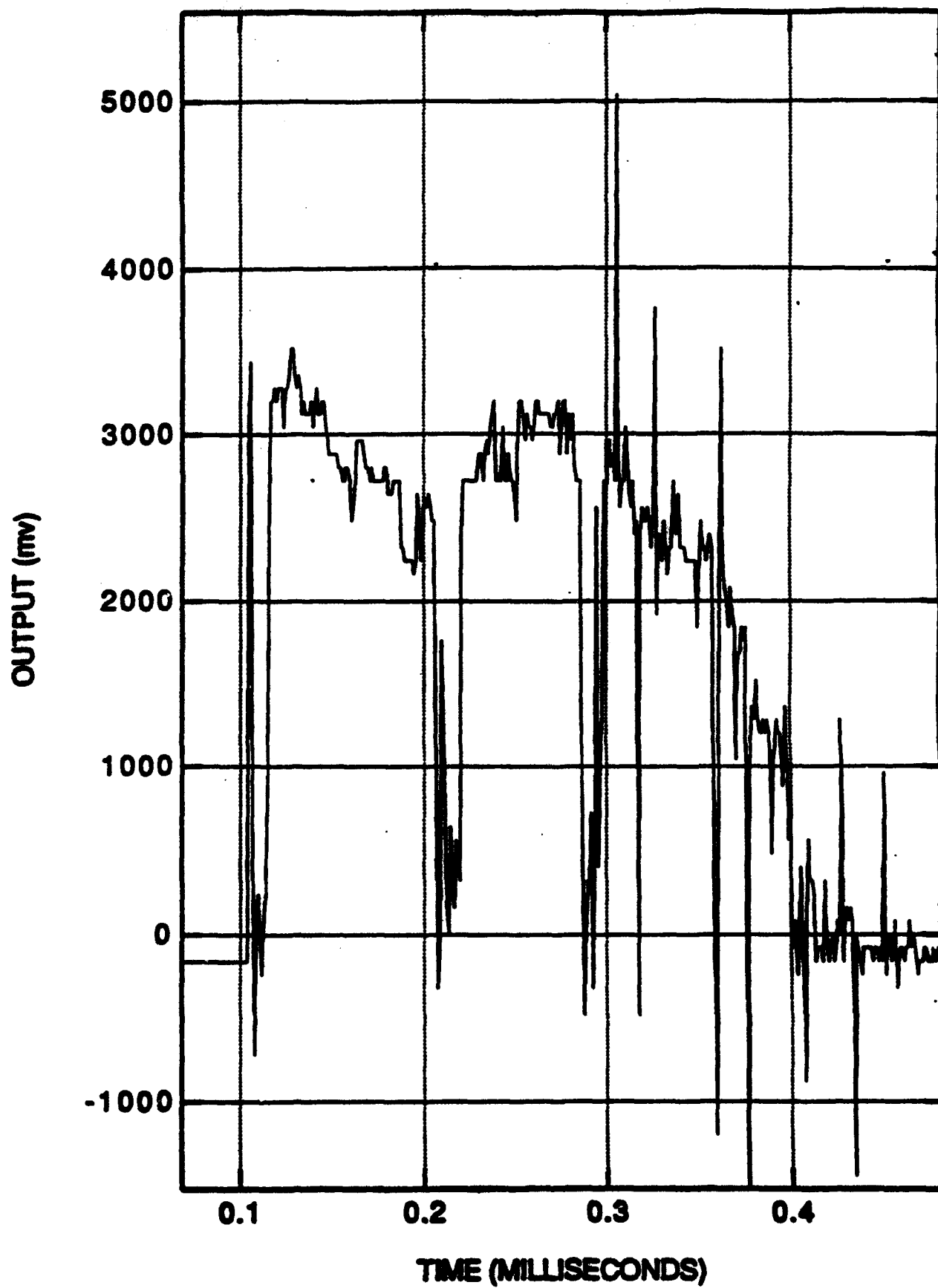
STABLE    DECAYING ✓ INCREASING   

OVERALL RESULT POSITIVE    NEGATIVE ✓

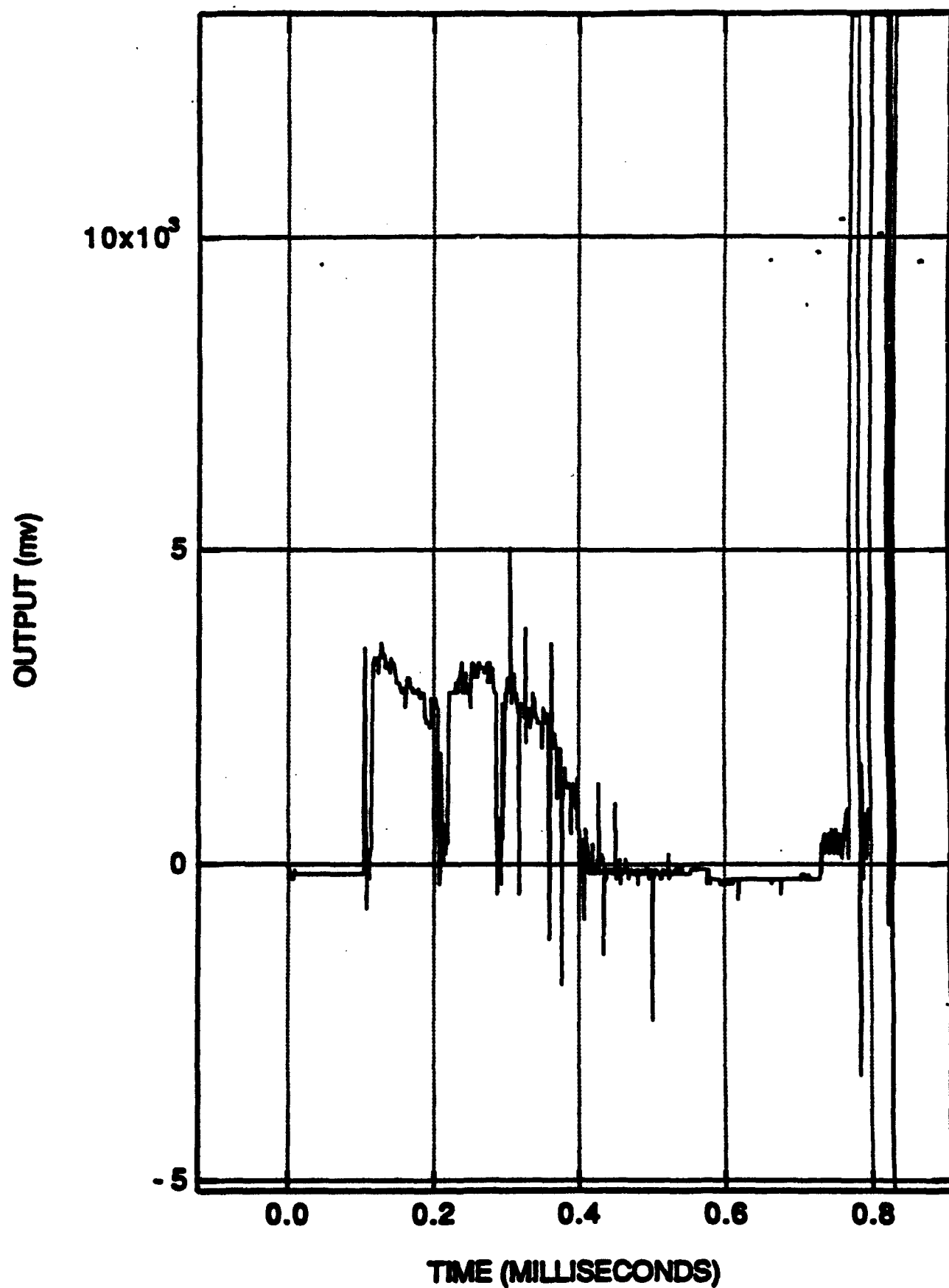
TEST PERSONNEL Gray, Elizardo, Zuchner

ADDITIONAL COMMENTS:

# GAP TEST 60

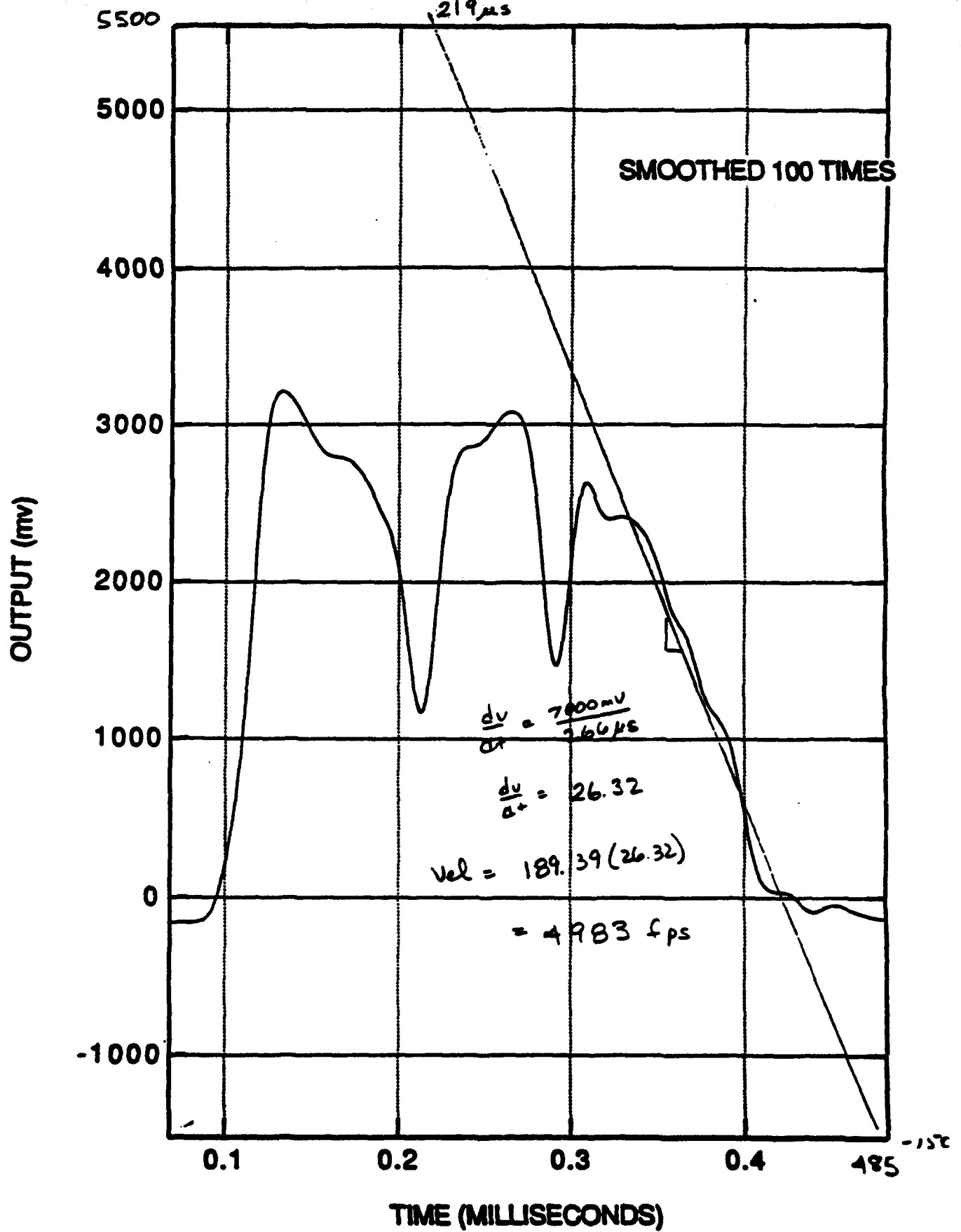


# GAP TEST 60





# GAP TEST 60



GAP TEST  
PROJECT 01-5132-001

TEST NO. 61 DATE 10/14/82  
SOIL SAMPLE NO. SB-01-005-0-1 TEMPERATURE 90

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT           

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES           

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE           

VELOCITY: PEAK 5682 FPS

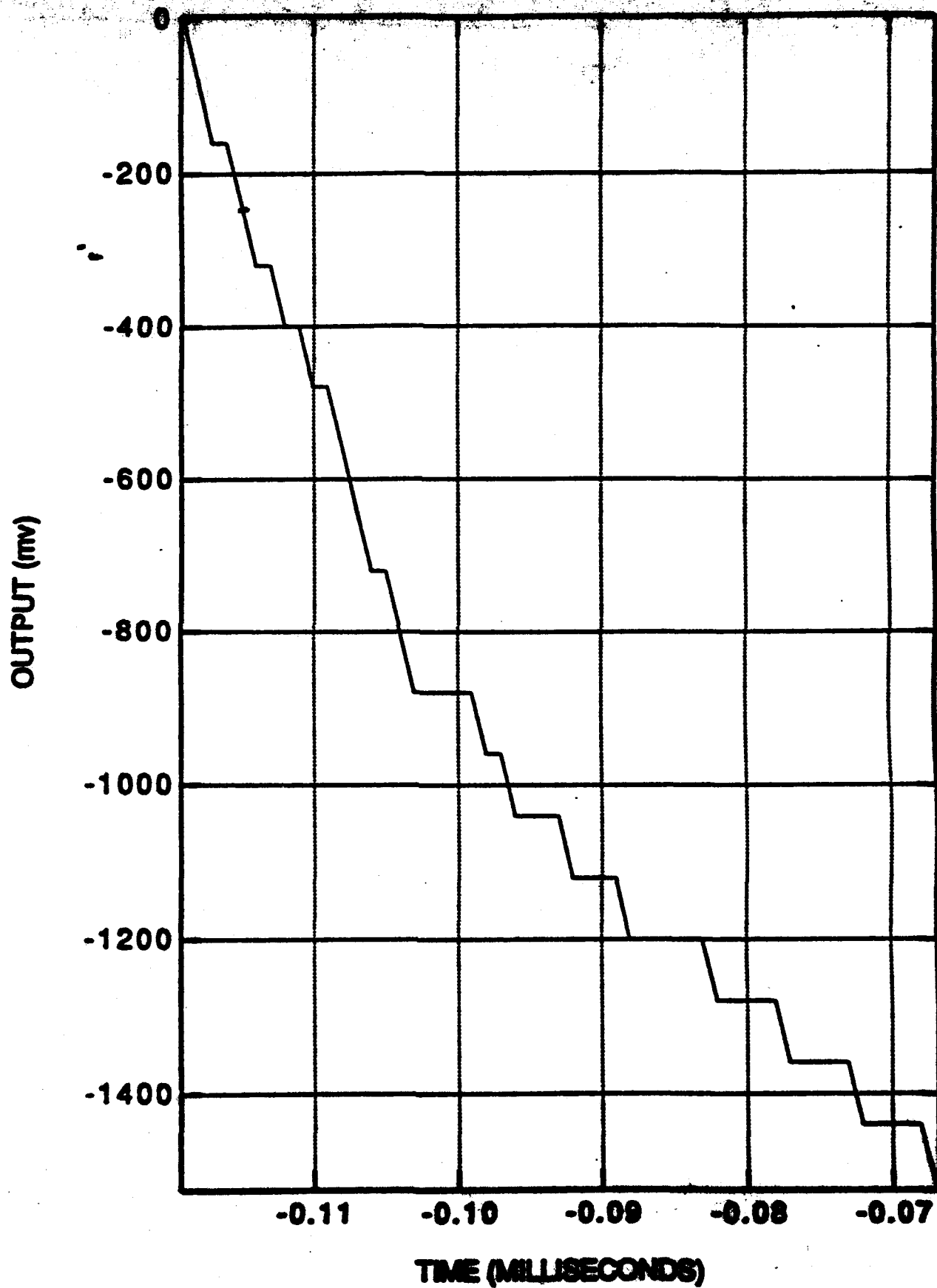
STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

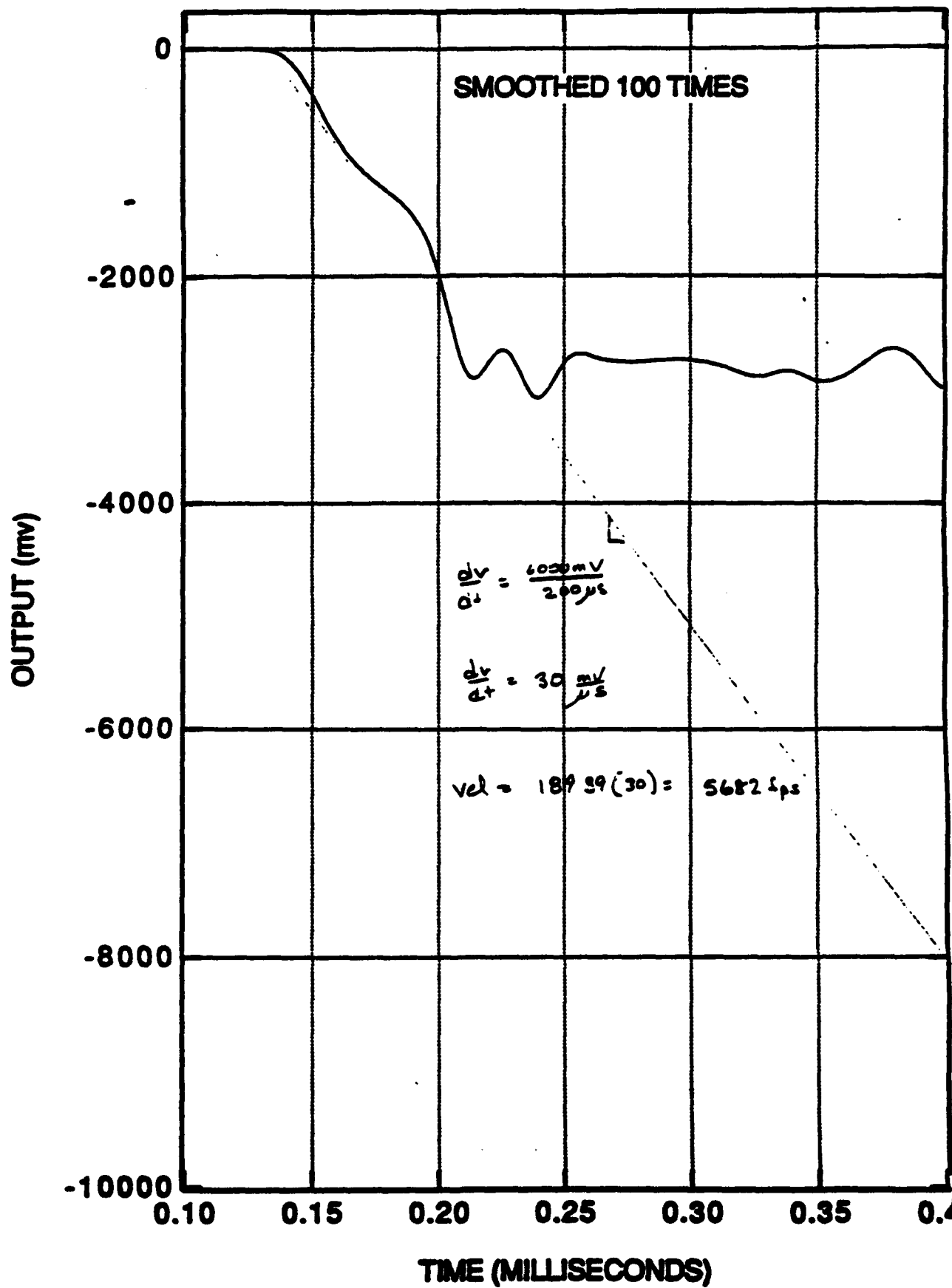
TEST PERSONNEL Greg, El. = 2nd, Z. = 1st

ADDITIONAL COMMENTS:

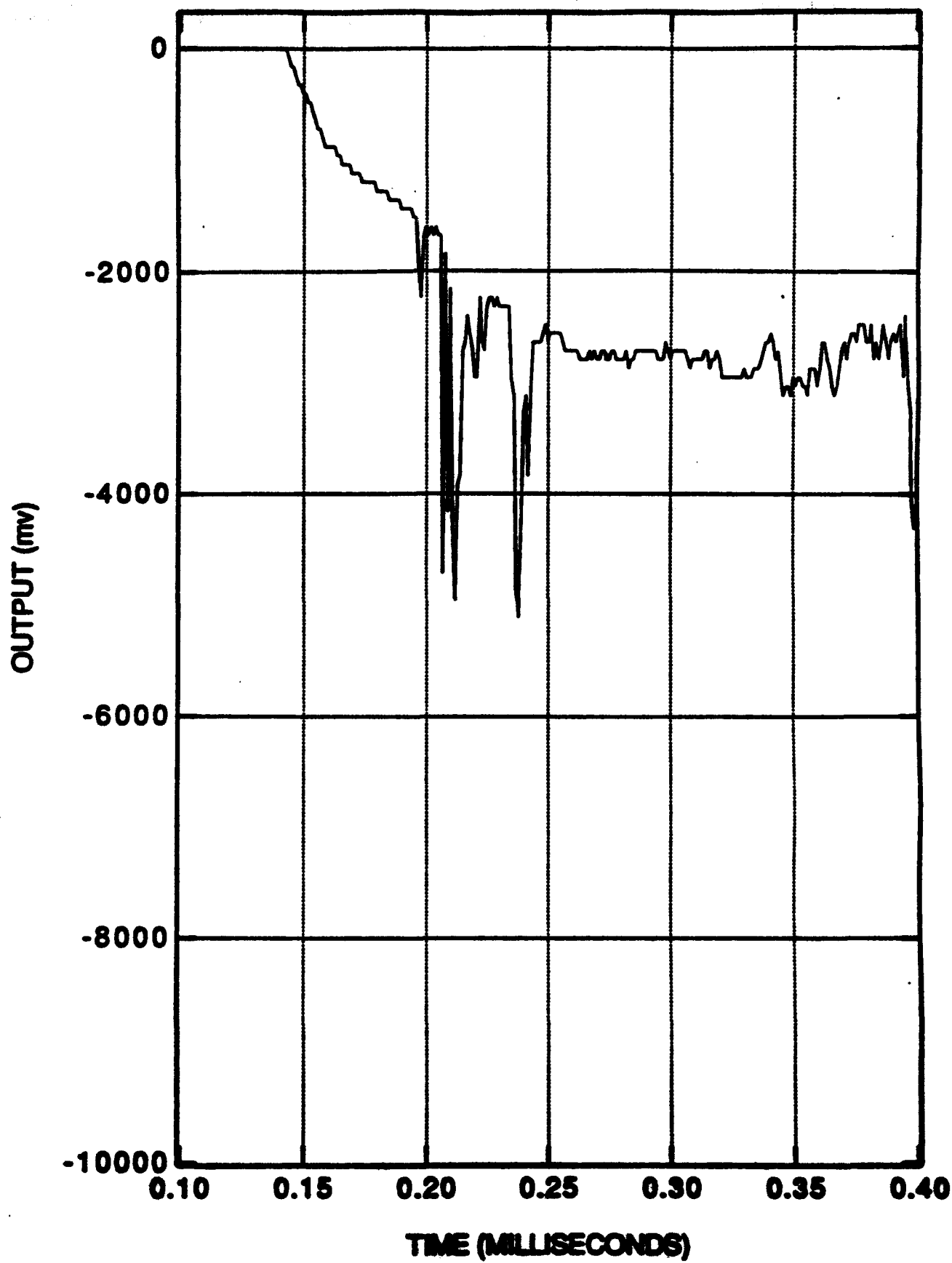
# GAP TEST 01



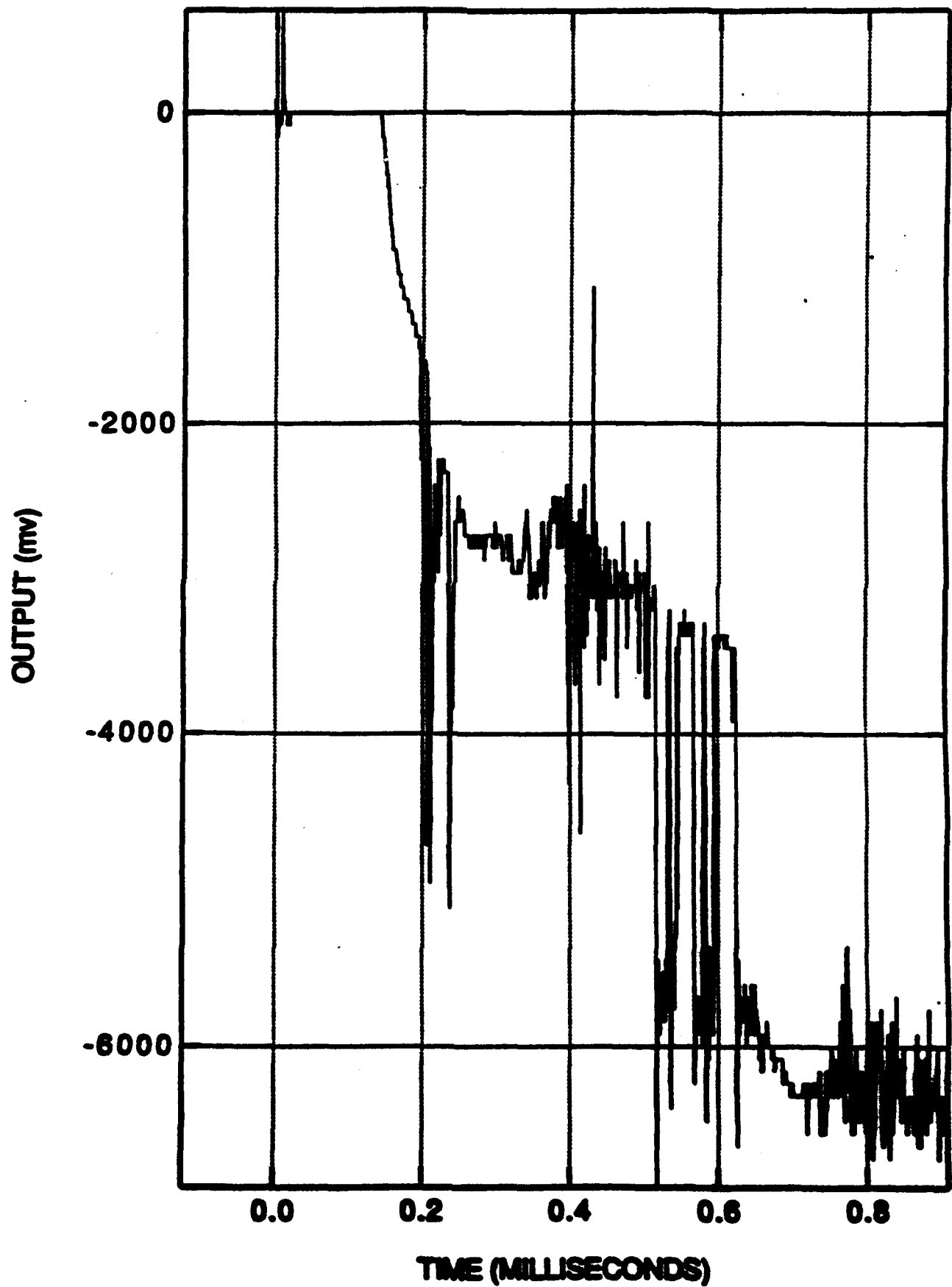
# GAP TEST 61



# GAP TEST 61



# GAP TEST 61



GAP TEST  
PROJECT 01-5132-001

TEST NO. 62  
SOIL SAMPLE NO. SB-01-007

DATE 10/15/92  
TEMPERATURE 80°

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE

VELOCITY: PEAK 3337 FPS

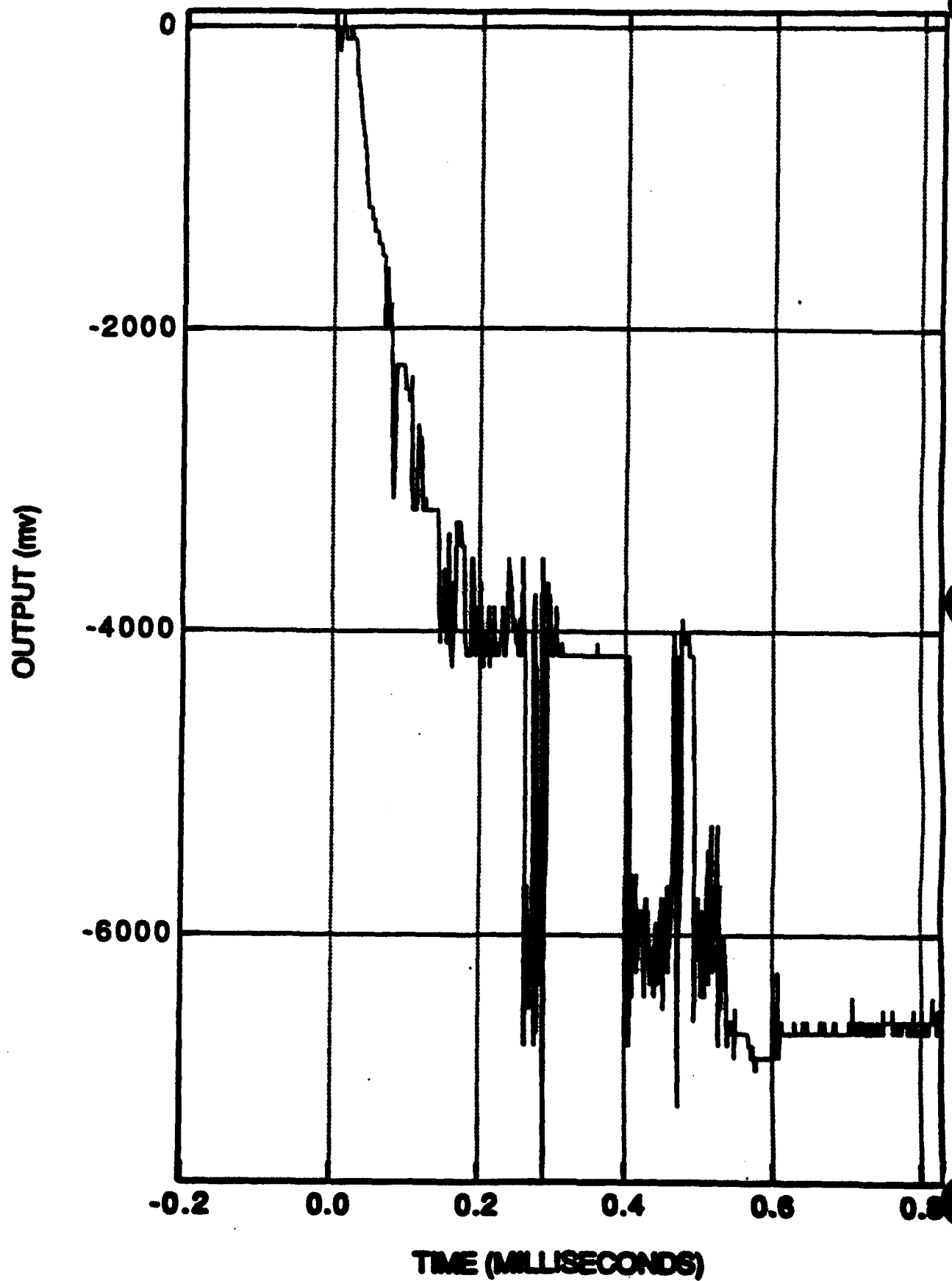
STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JE, EZ.

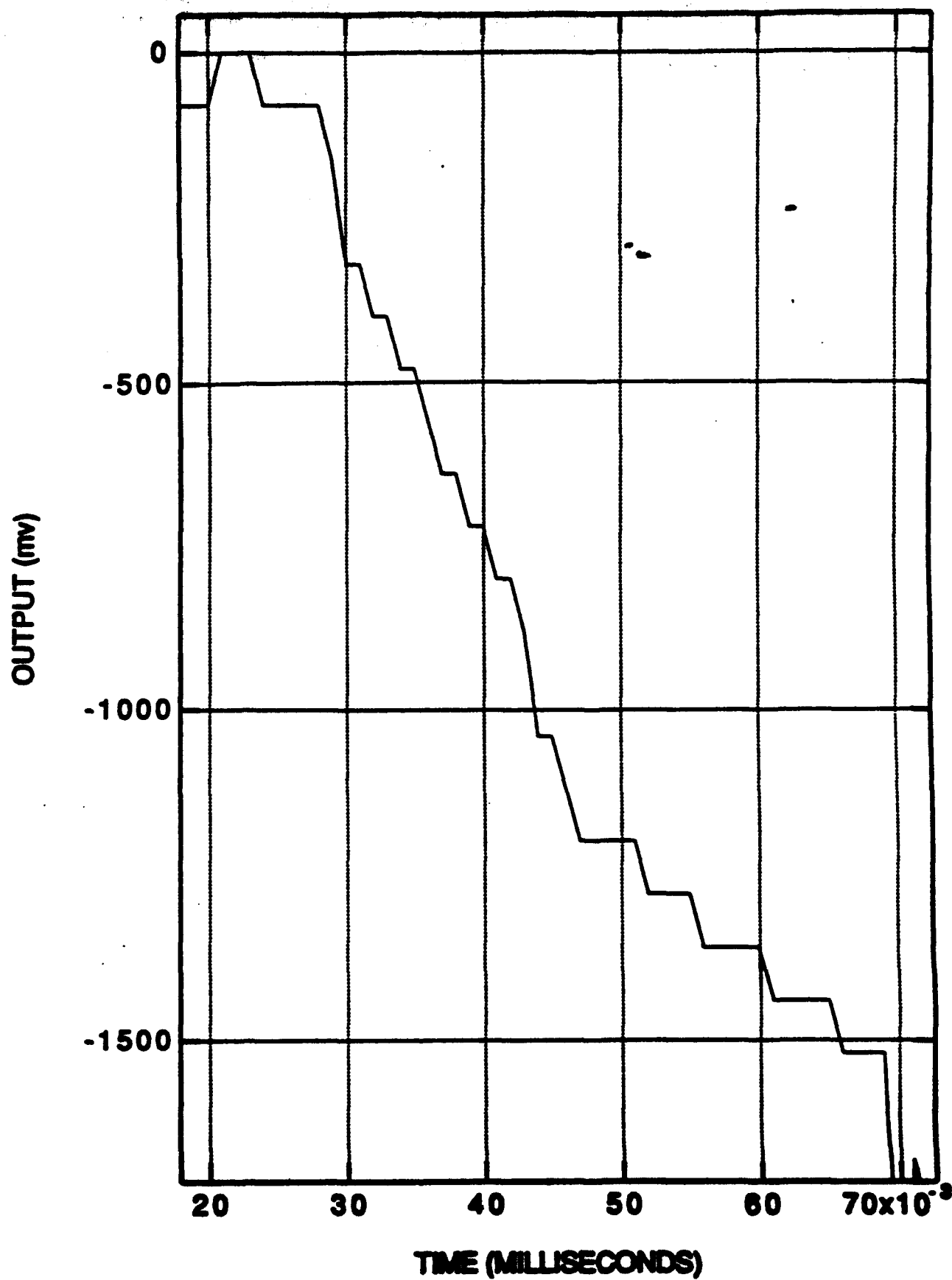
ADDITIONAL COMMENTS:

# GAP TEST 62

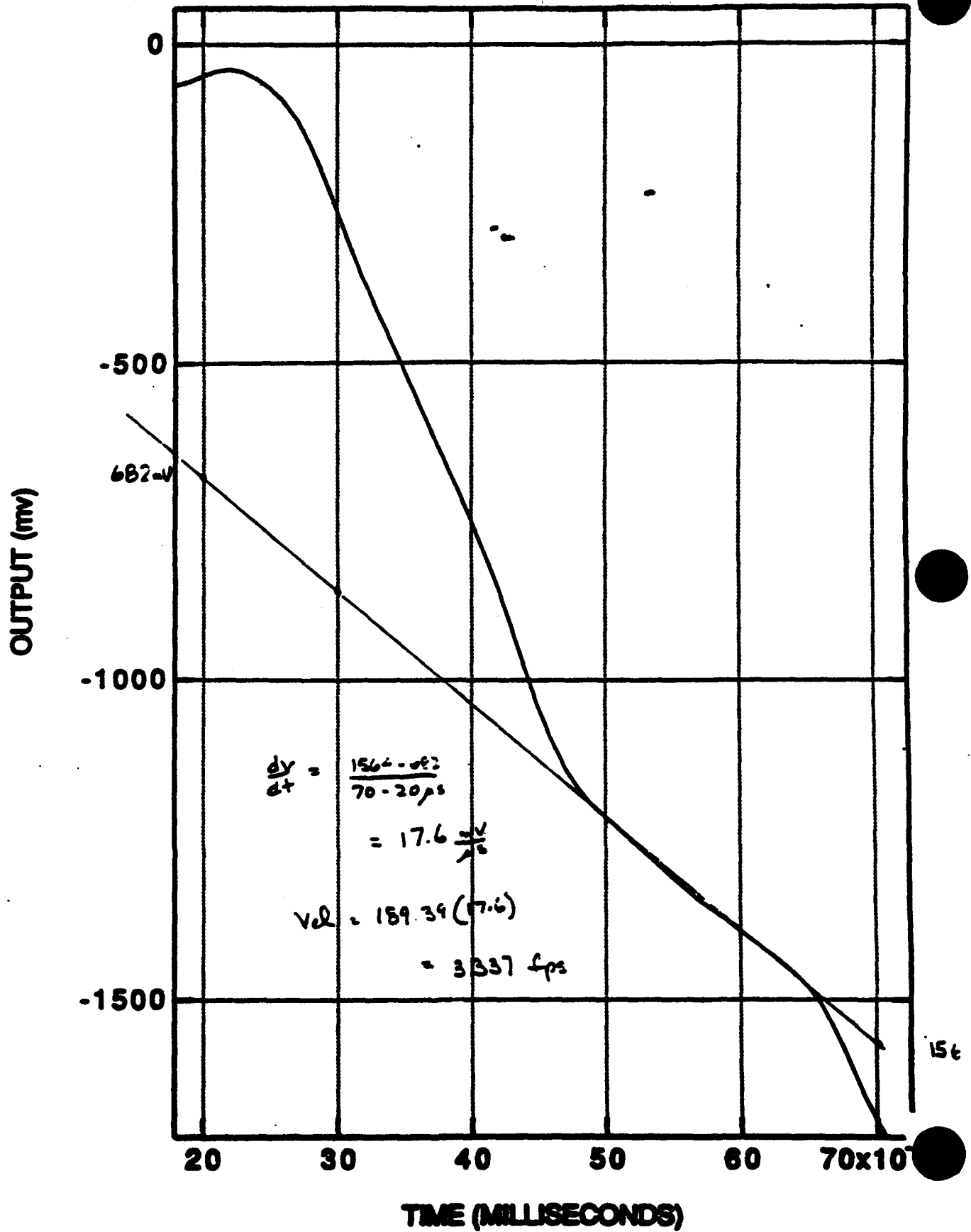




# GAP TEST 02



# GAP TEST 62



GAP TEST  
PROJECT 01-5132-001

TEST NO. 63 DATE 10/15/92  
SOIL SAMPLE NO. SB-01-007 TEMPERATURE 80°

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE

VELOCITY: PEAK 3788 FPS

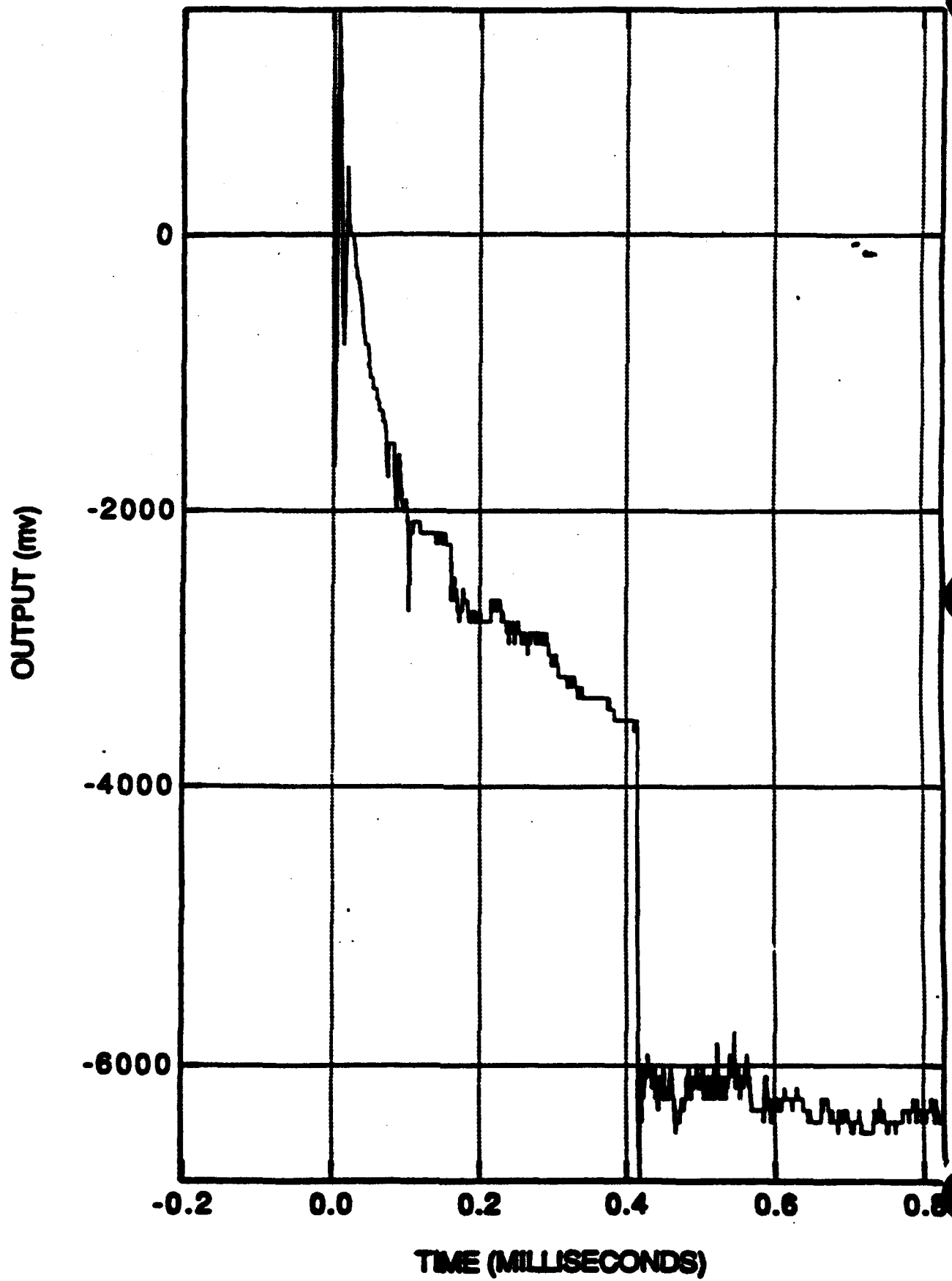
STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☐

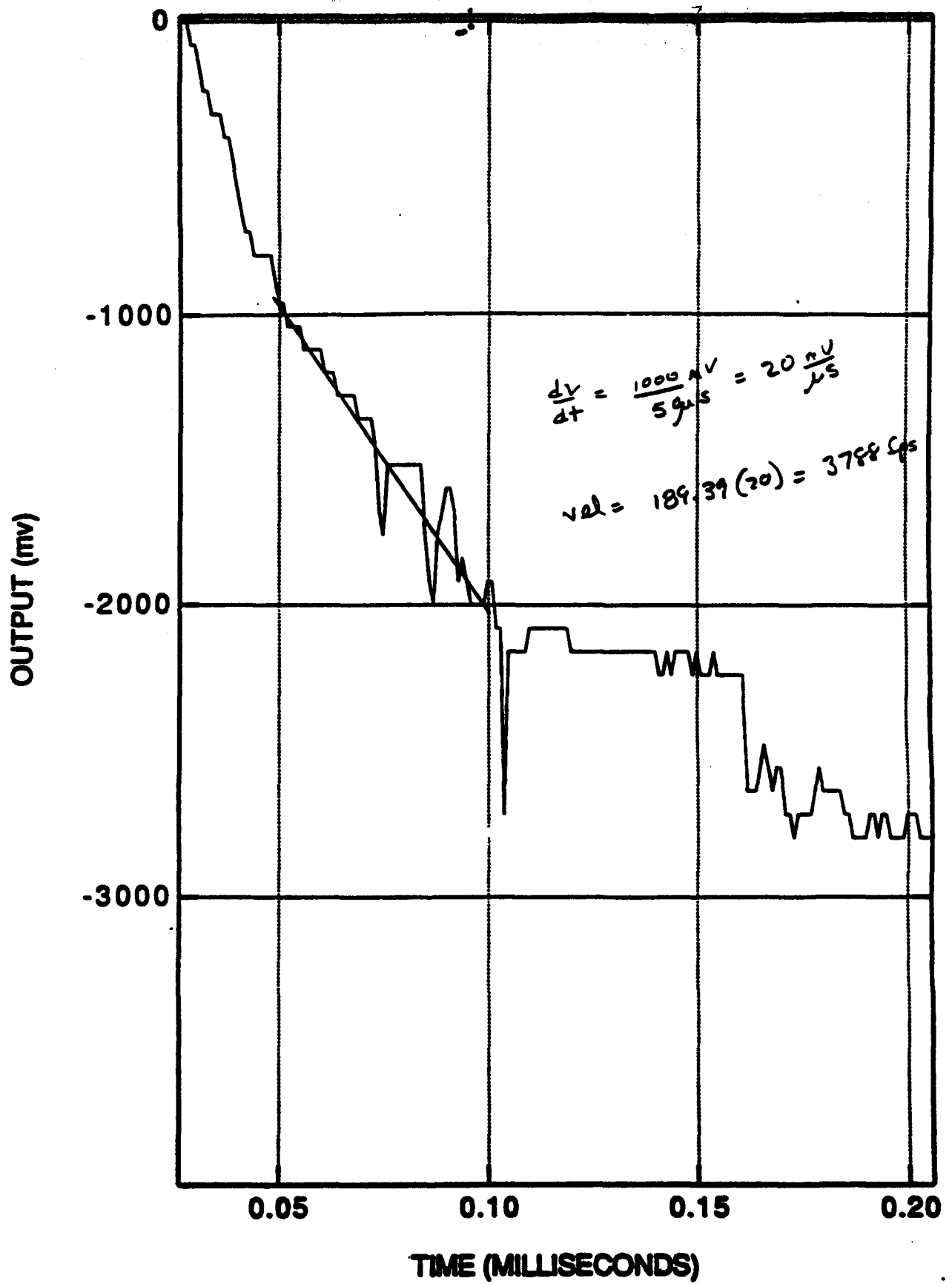
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

# GAP TEST 63



# GAP TEST 63



GAP TEST  
PROJECT 01-5132-001

TEST NO. 64

DATE 10/15/92

SOIL SAMPLE NO. SB-01-001

TEMPERATURE 80°

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT ☐

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES ☐

HOLE PUNCHED IN WITNESS PLATE NO ☐ YES ☐ SIZE ☐

VELOCITY: PEAK 3551 FPS

STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

AD-A282 574

TOOELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SHMUS

10/15

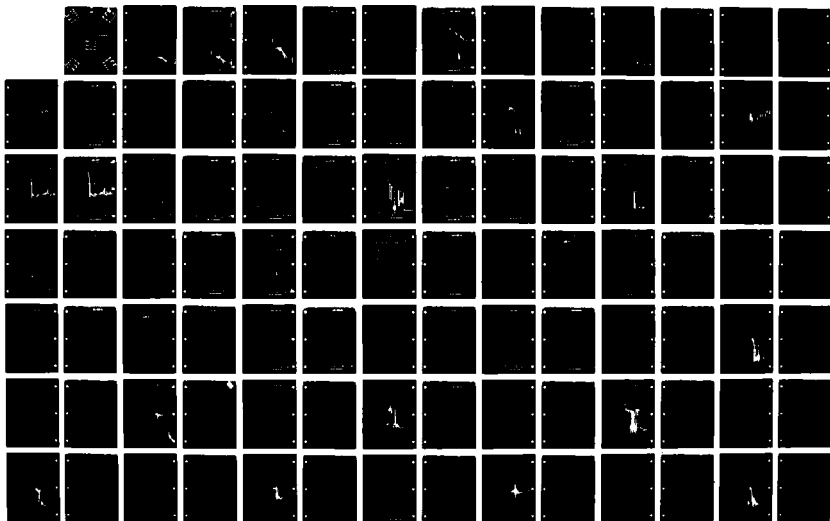
VOLUME 2 APPENDICES A - J REVISION(U) MONTGOMERY

WATSON WALNUT CREEK CA DEC 93 XA-USAEC

UNCLASSIFIED

DAAA15-90-D-0011

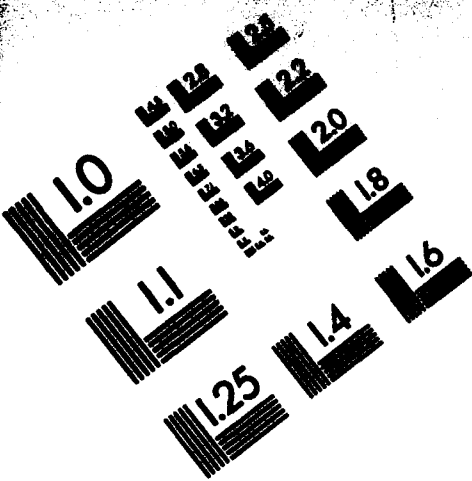
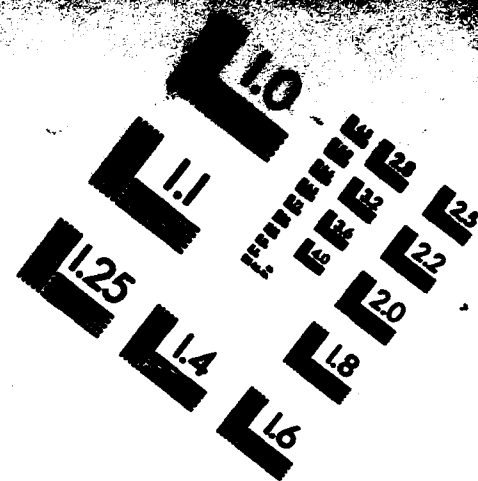
NL



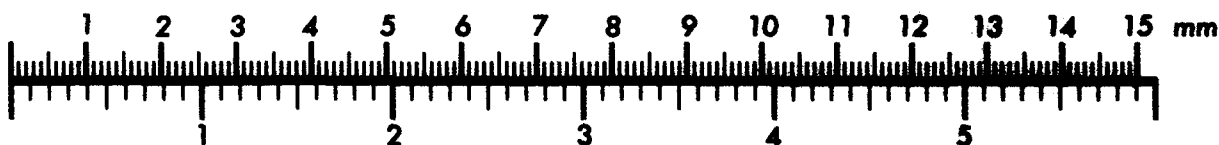


Association for Information and Image Management

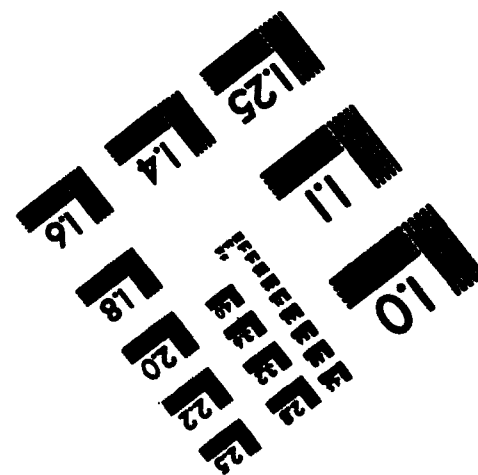
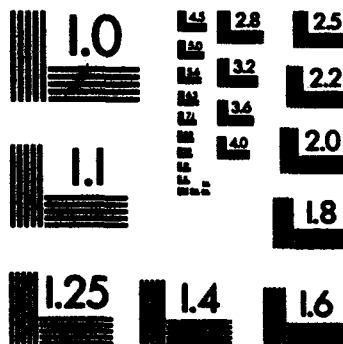
1100 Wayne Avenue, Suite 1100  
Silver Spring, Maryland 20910  
301/587-8202



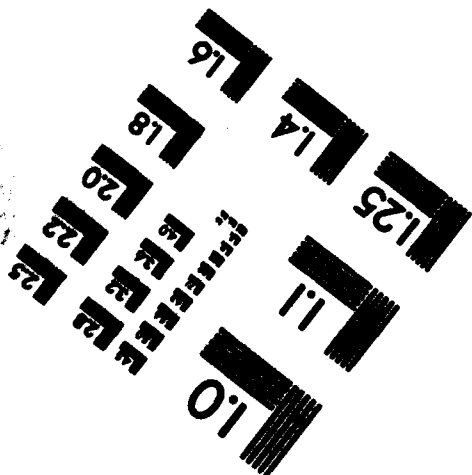
Centimeter



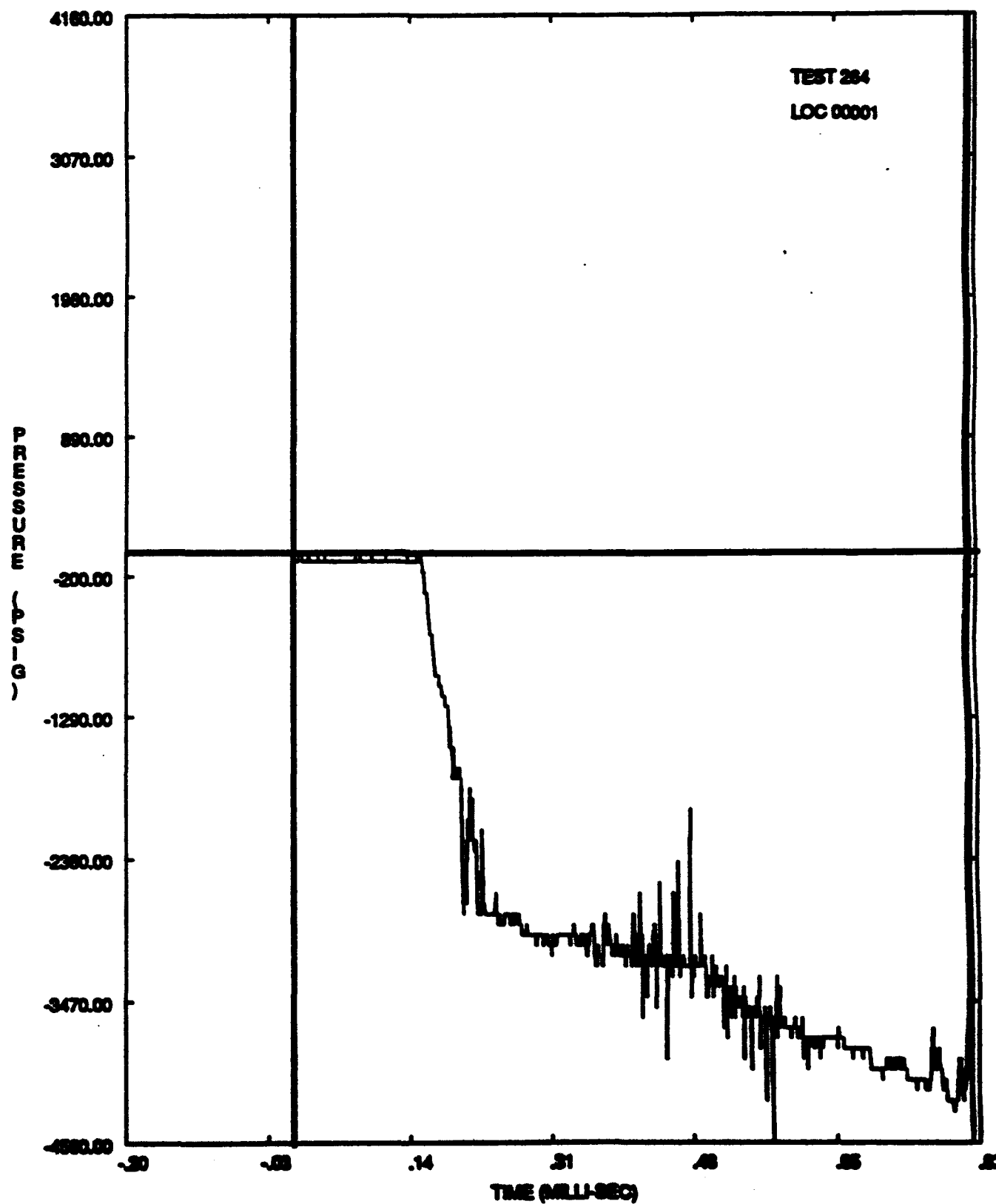
Inches



MANUFACTURED TO AIM STANDARDS  
BY APPLIED IMAGE, INC.

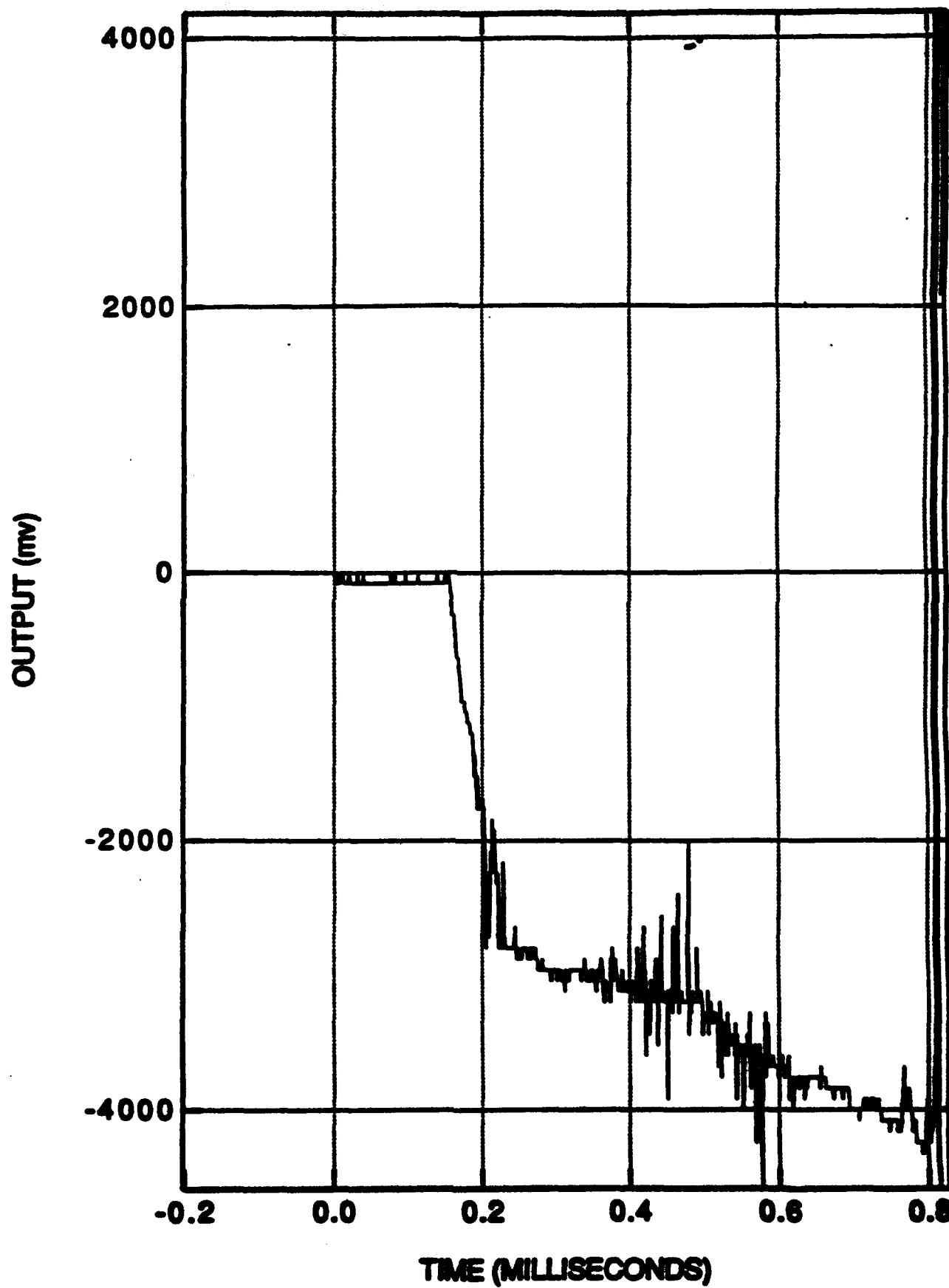




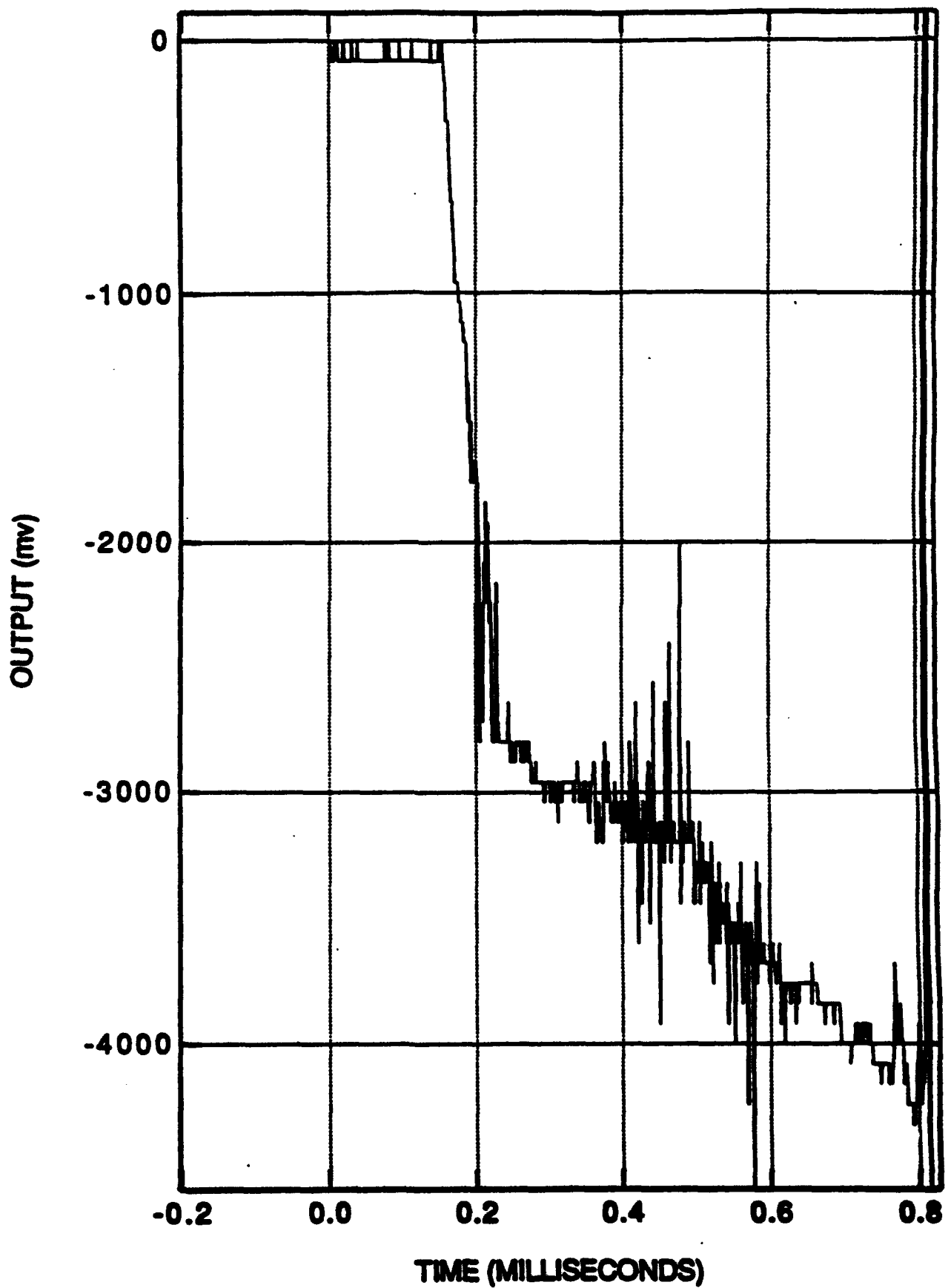


10/15/92

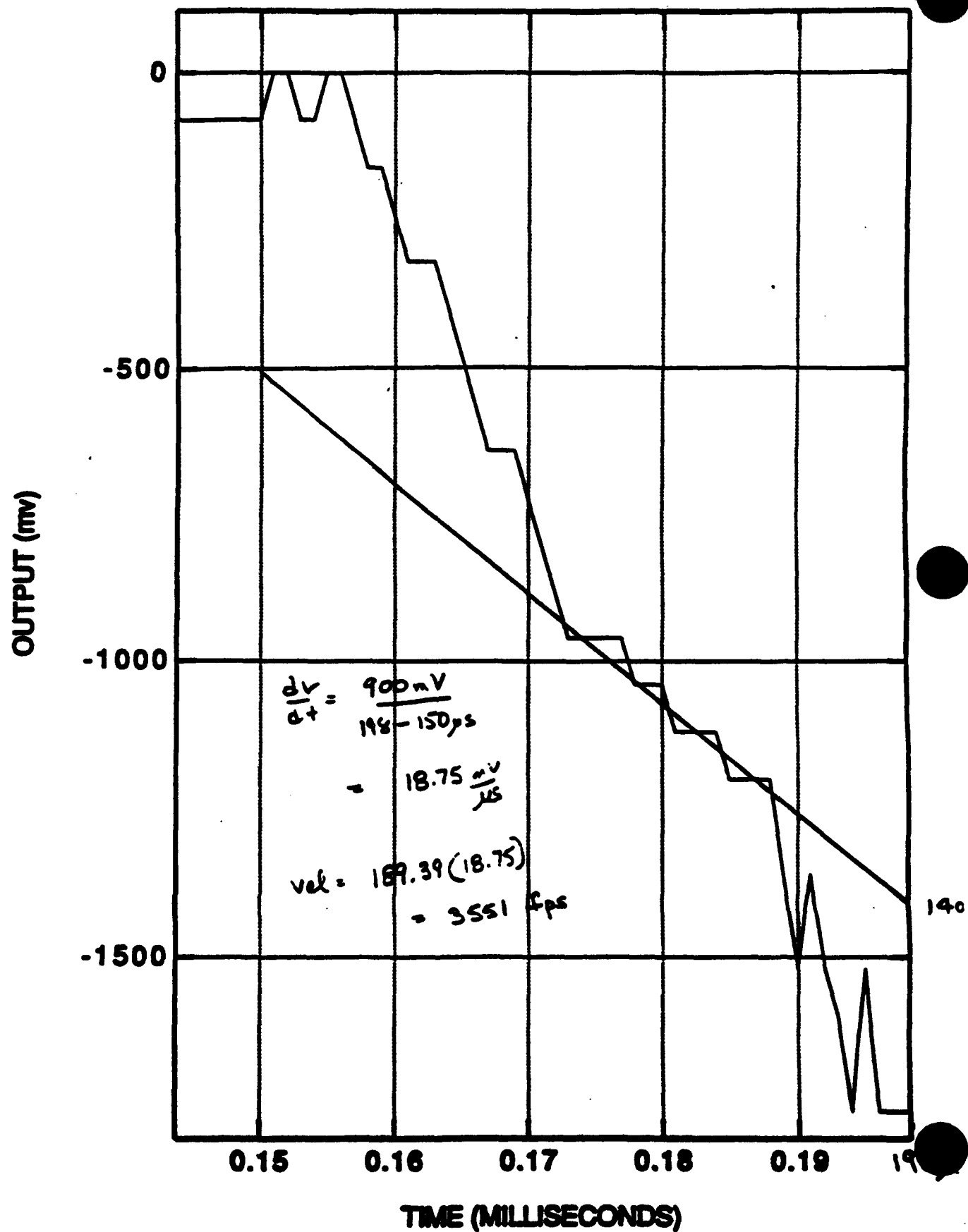
# GAP TEST 64



# GAP TEST 64



# GAP TEST 64



GAP TEST  
PROJECT 01-5132-001

TEST NO. 65

DATE 10/15/92

SOIL SAMPLE NO. SB-01-001

TEMPERATURE 9"

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE

VELOCITY: PEAK 4735 FPS

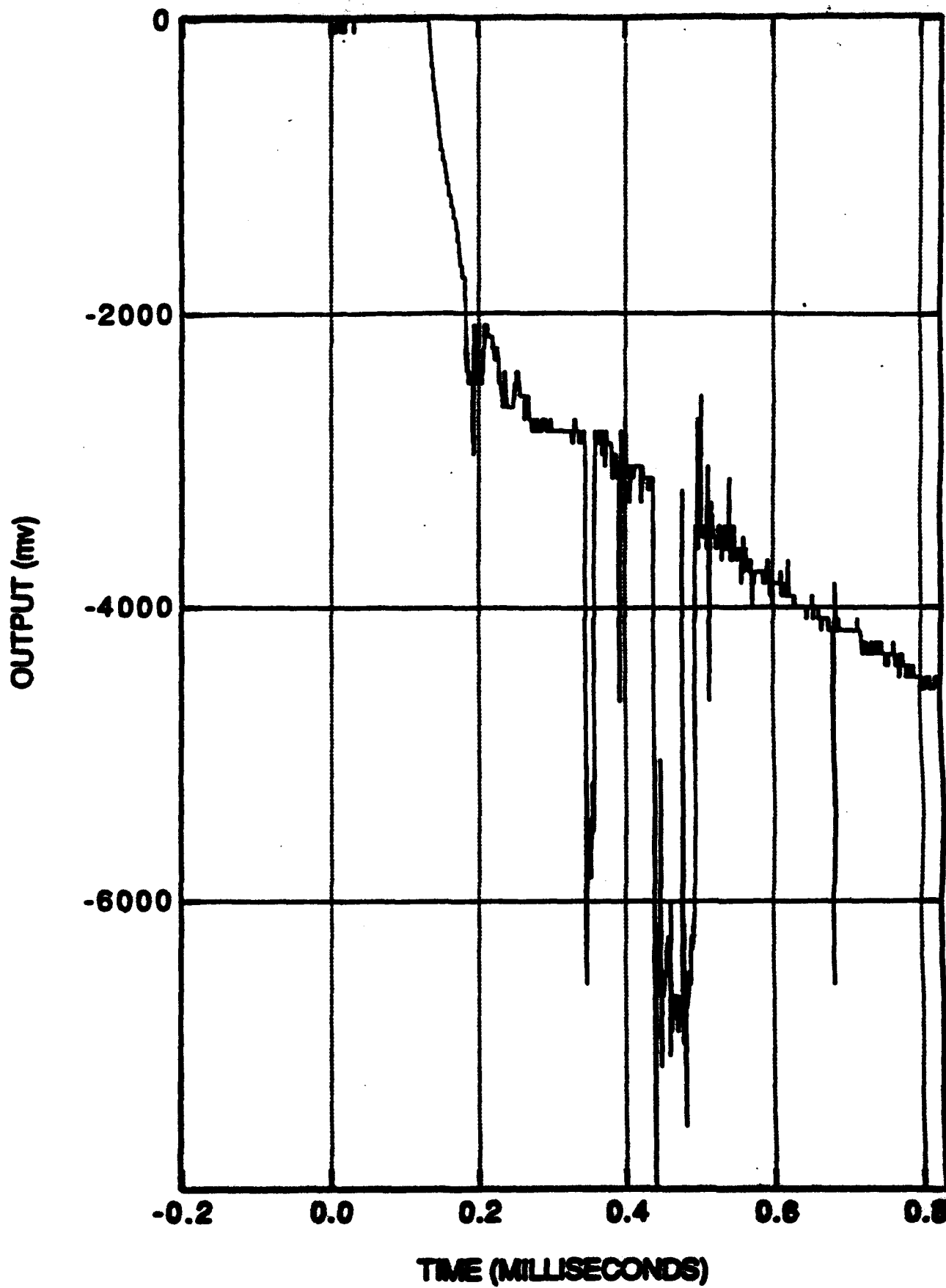
STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

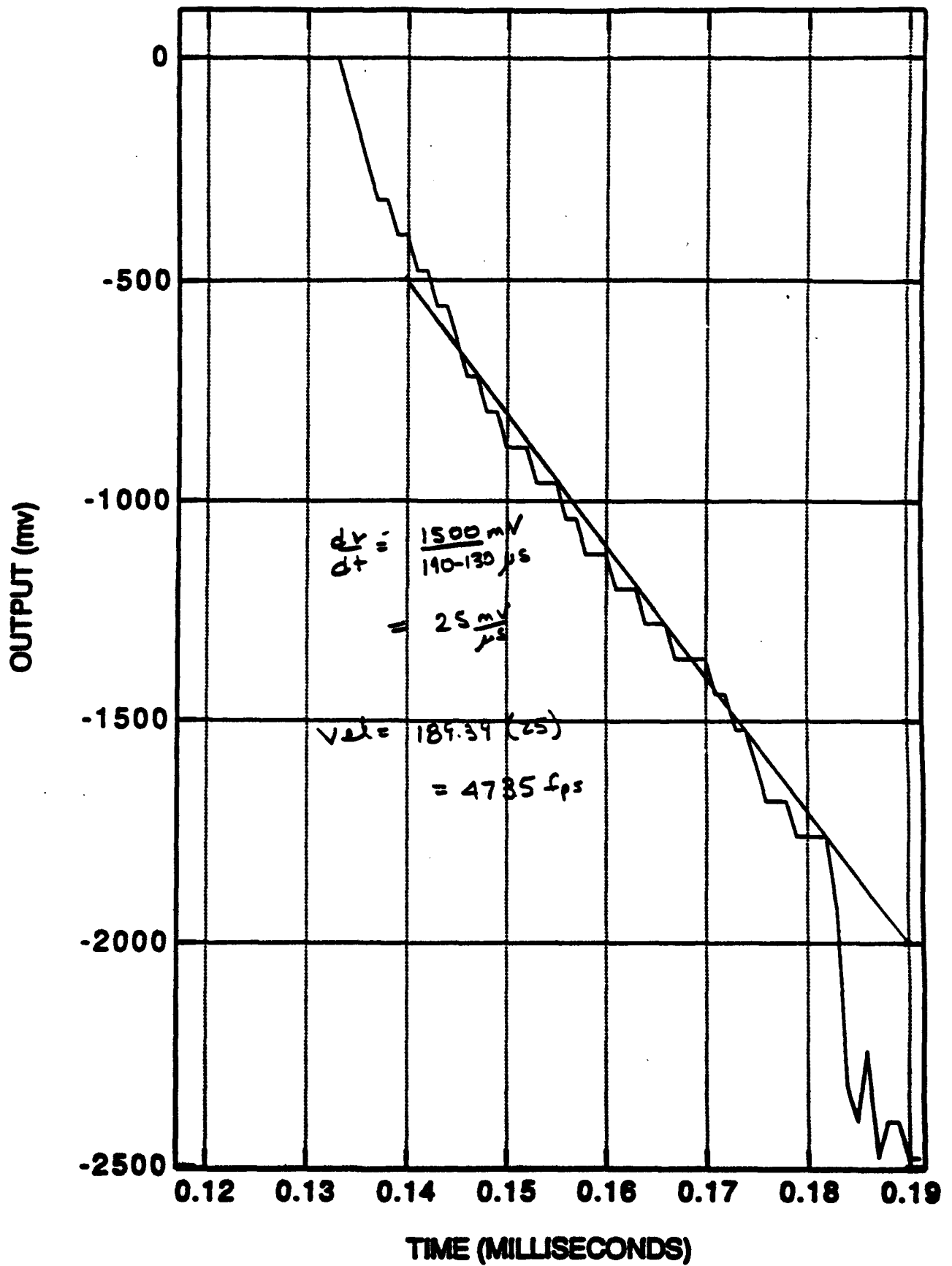
TEST PERSONNEL EZ, & JE.

ADDITIONAL COMMENTS:

# GAP TEST 65



# GAP TEST 65



GAP TEST  
PROJECT 01-5132-001

TEST NO. 66

DATE 10

SOIL SAMPLE NO. SB-01-002

TEMPERATURE 91

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT ☐

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES ☐

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE ☐

VELOCITY: PEAK 2271 FPS

STABLE ☐ DECAYING ☒ INCREASING ☐

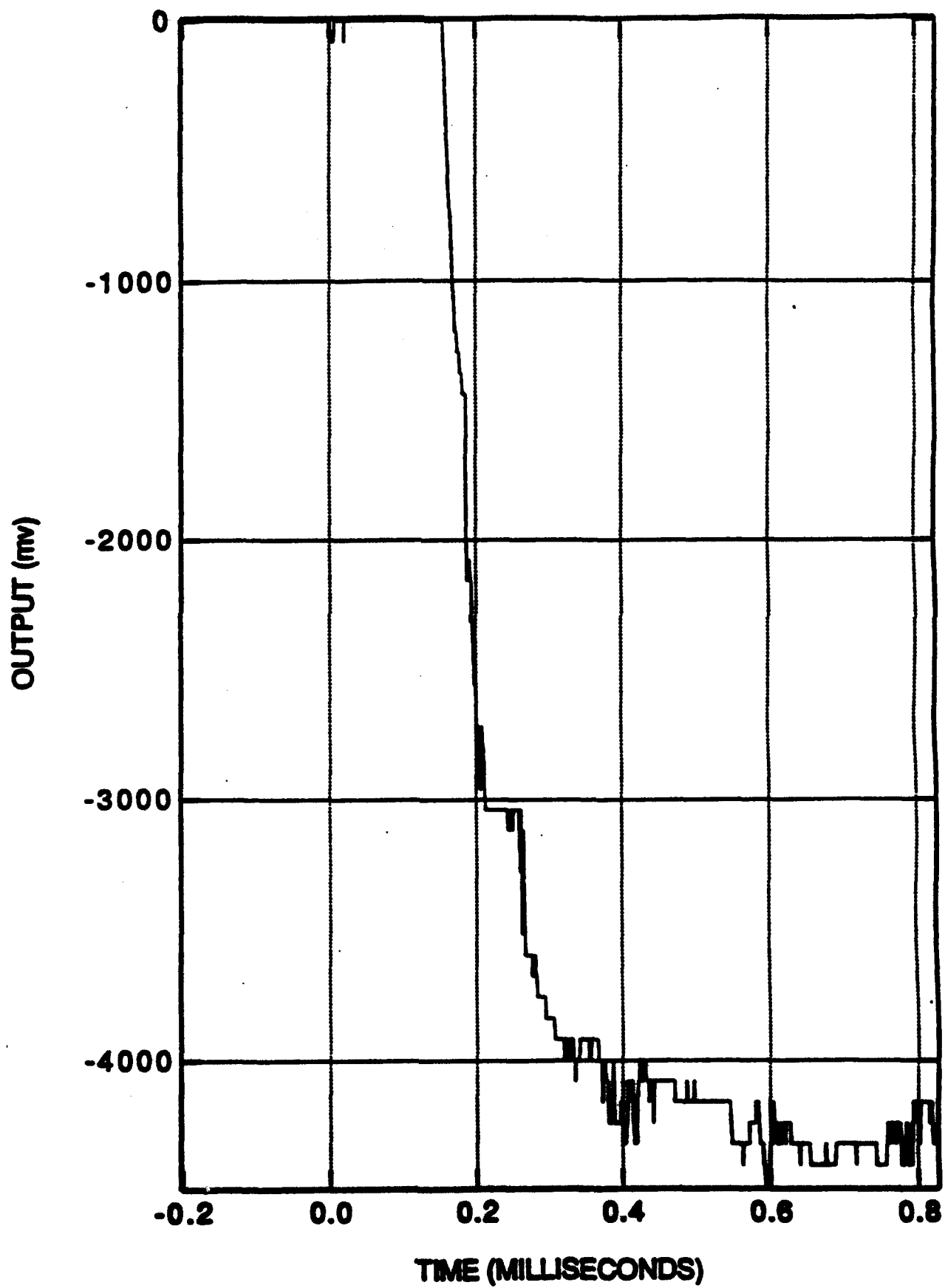
OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL EZ & JE

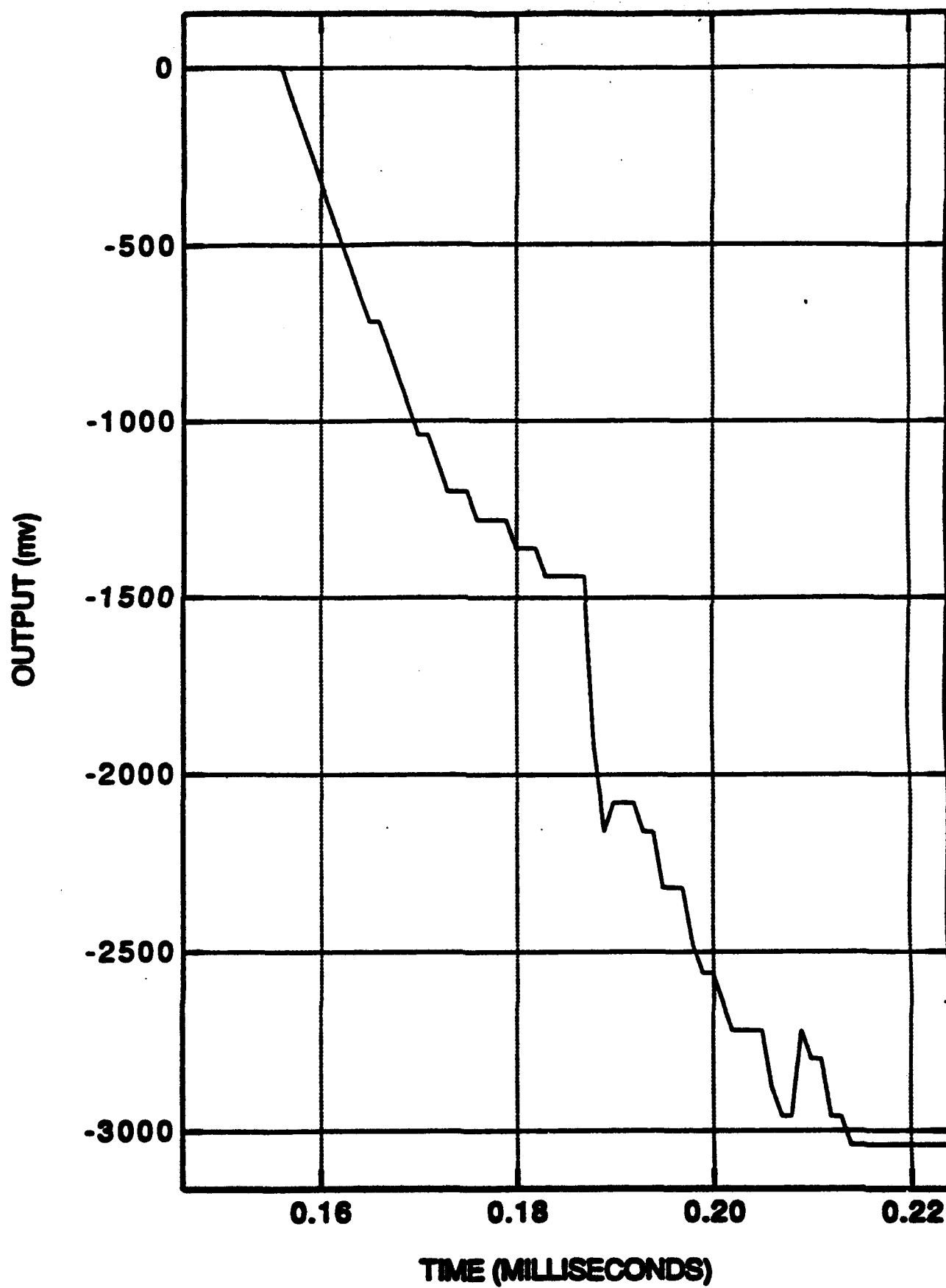
ADDITIONAL COMMENTS:



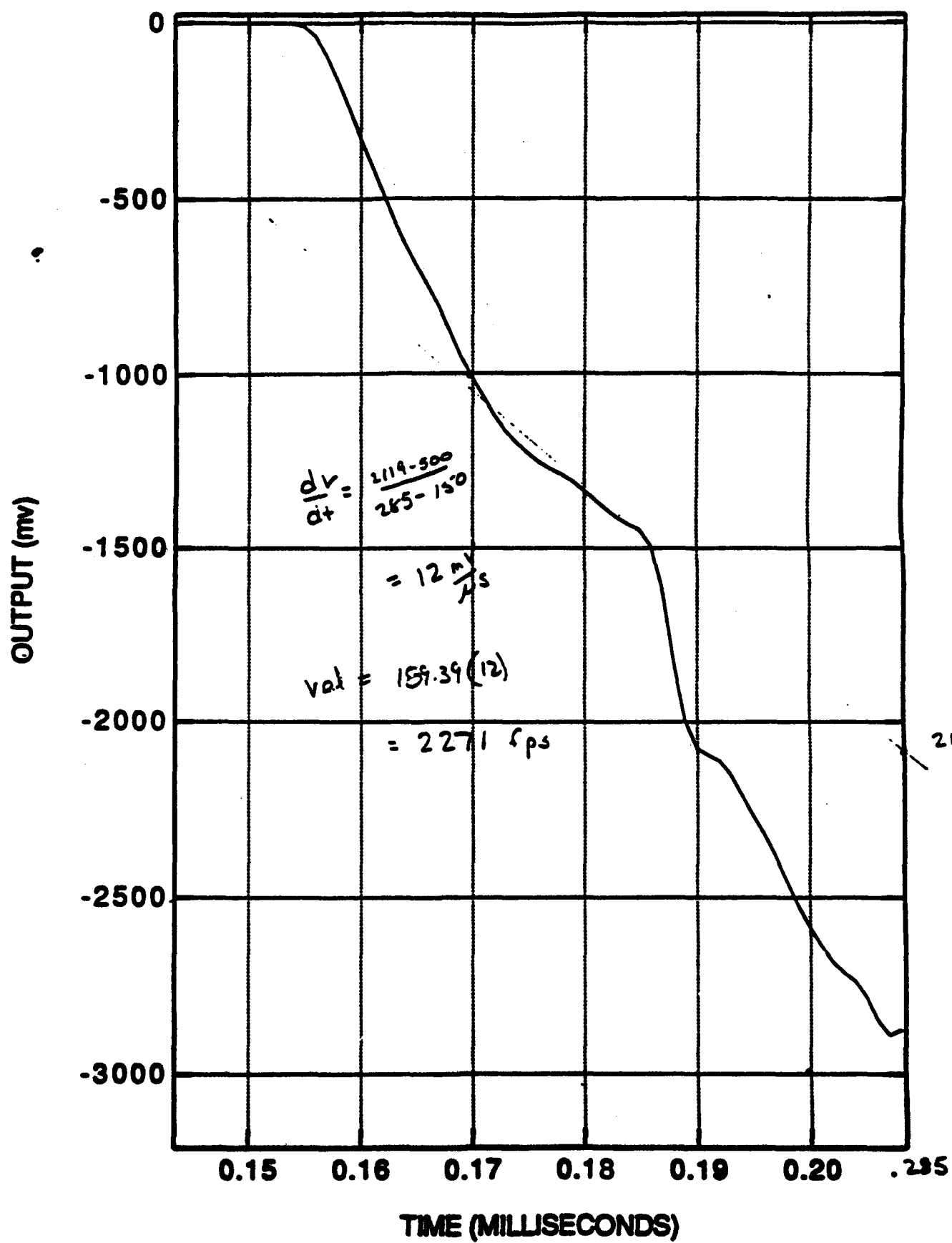
# GAP TEST 66



# GAP TEST 86



# GAP TEST 66



GAP TEST  
PROJECT 01-5132-001

TEST NO. 67

DATE 10/15/92

SOIL SAMPLE NO. SB-01-002

TEMPERATURE 89°

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE

VELOCITY: PEAK 5510 FPS

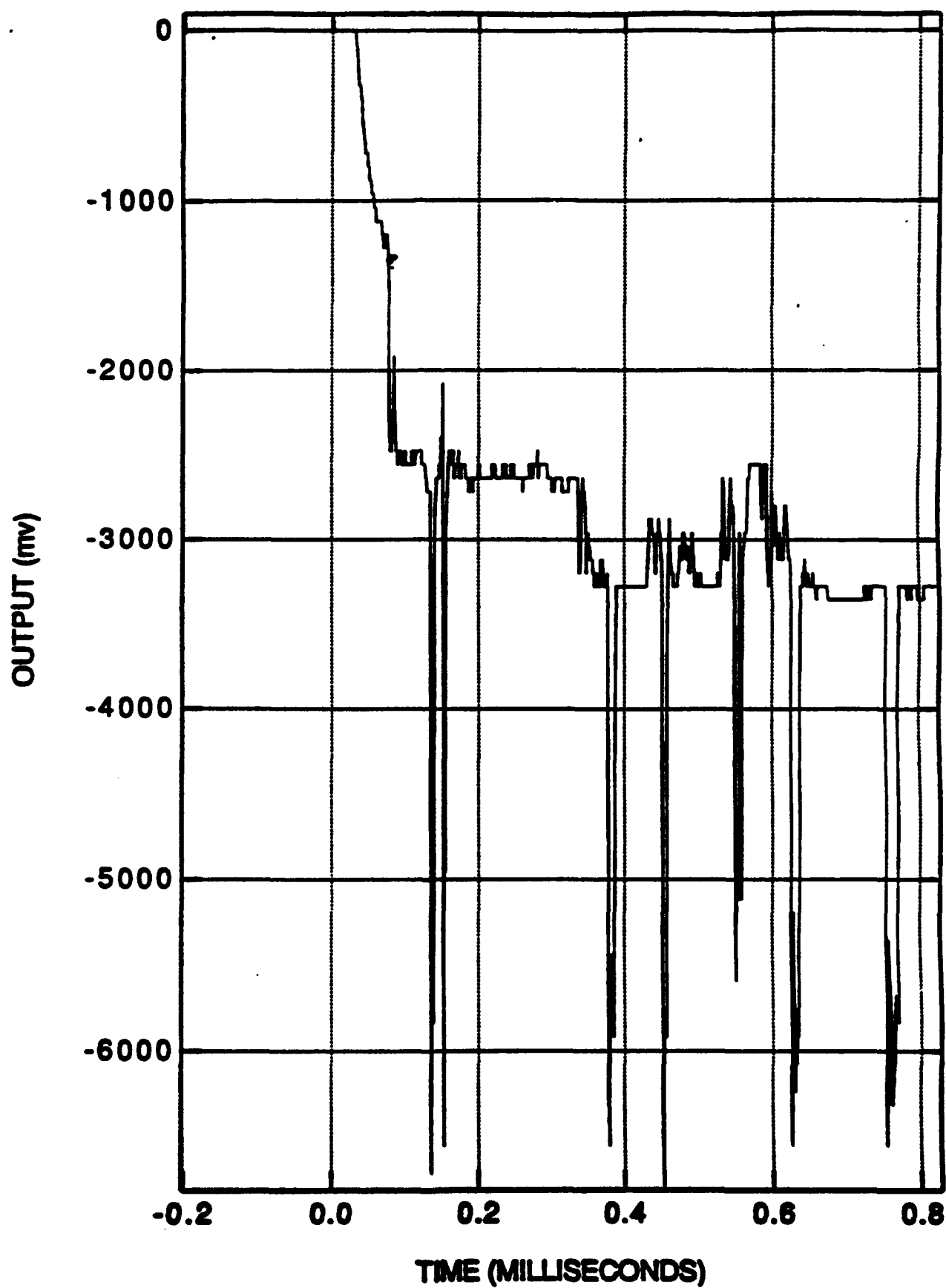
STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

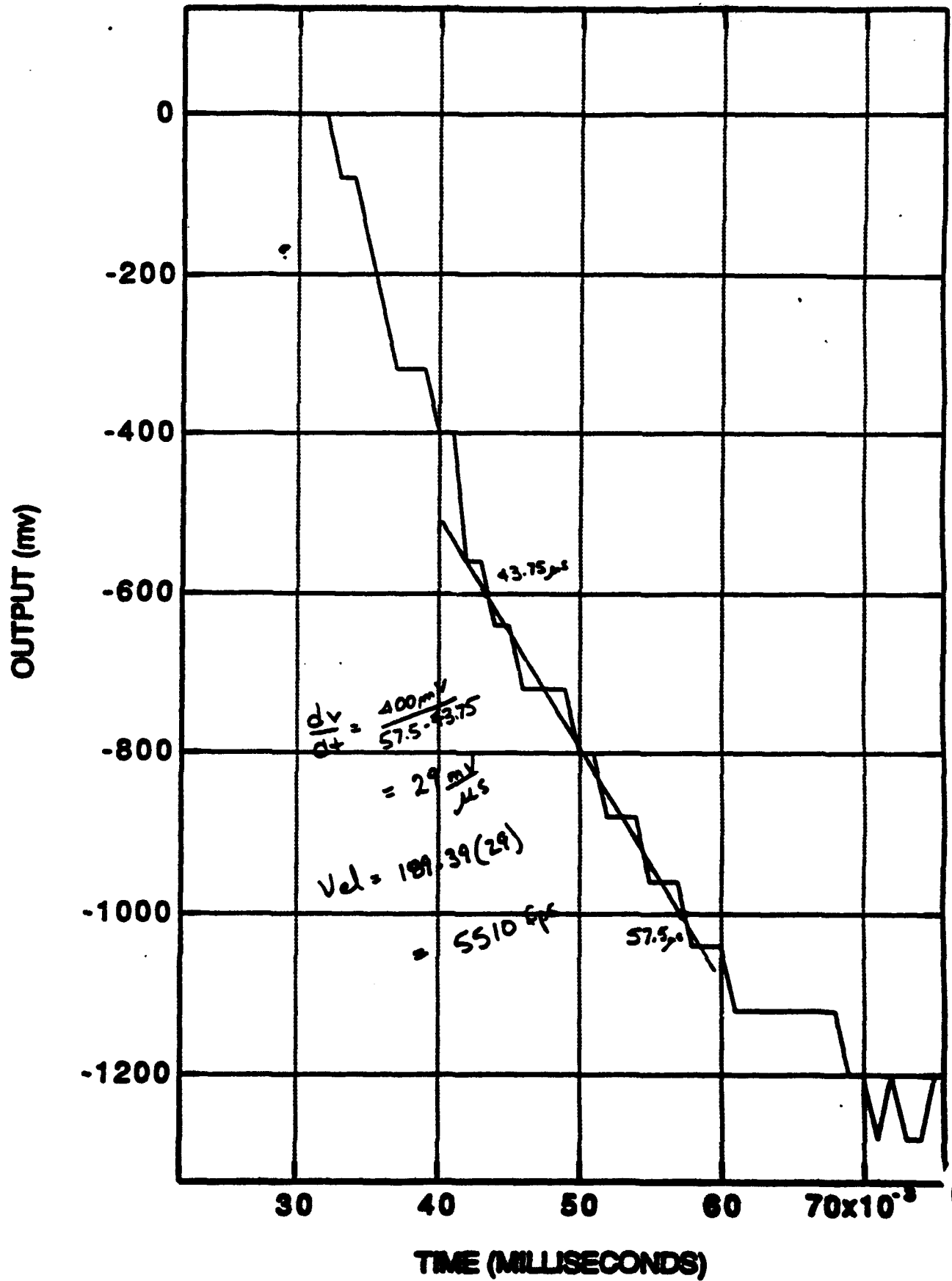
TEST PERSONNEL EZ & JE.

ADDITIONAL COMMENTS:

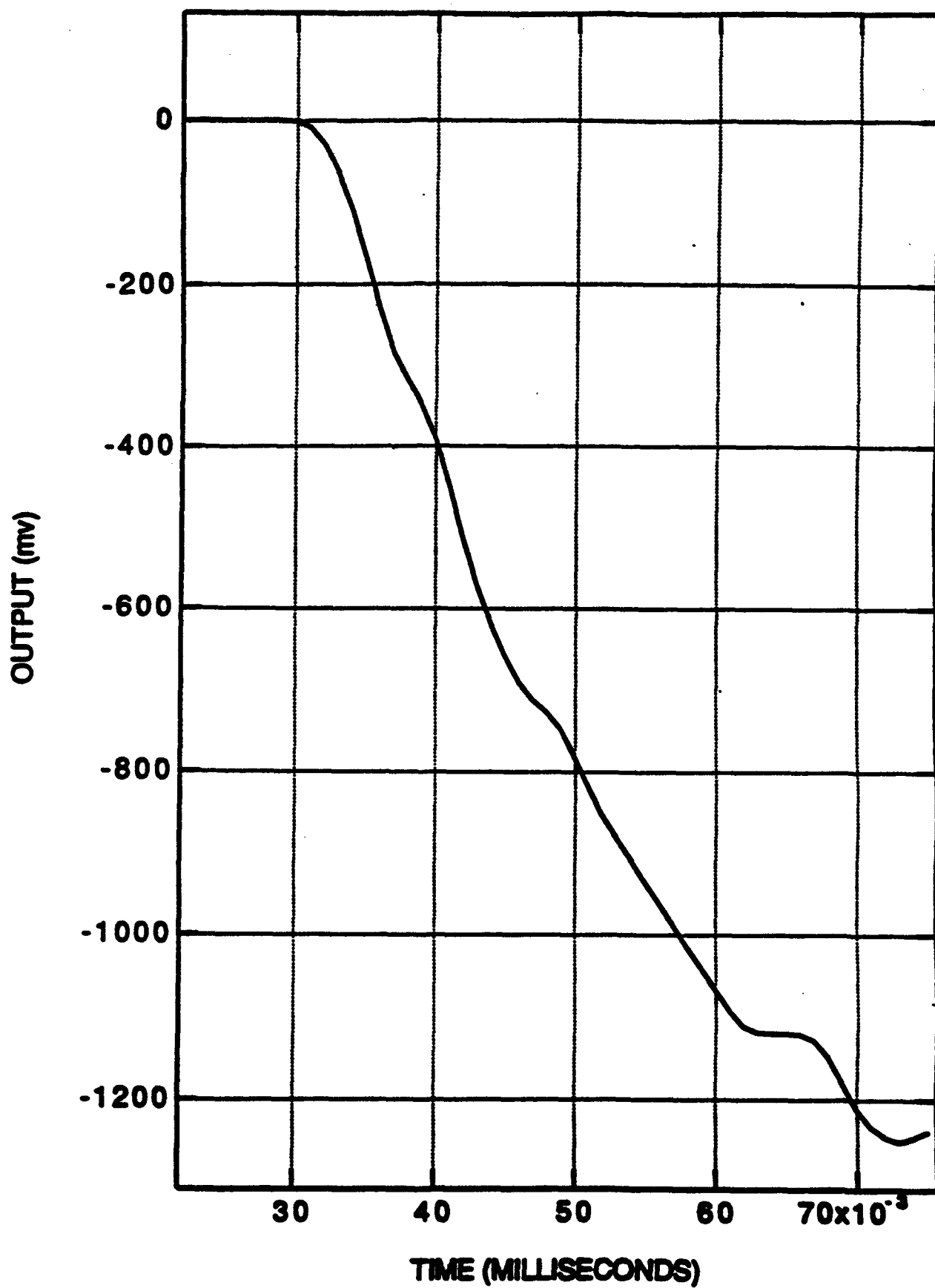
# GAP TEST 67



# GAP TEST 67



# GAP TEST 67



GAP TEST  
PROJECT 01-5132-001

TEST NO. 68 DATE 10/15/92  
SOIL SAMPLE NO. EP-01-087-01 TEMPERATURE 89°

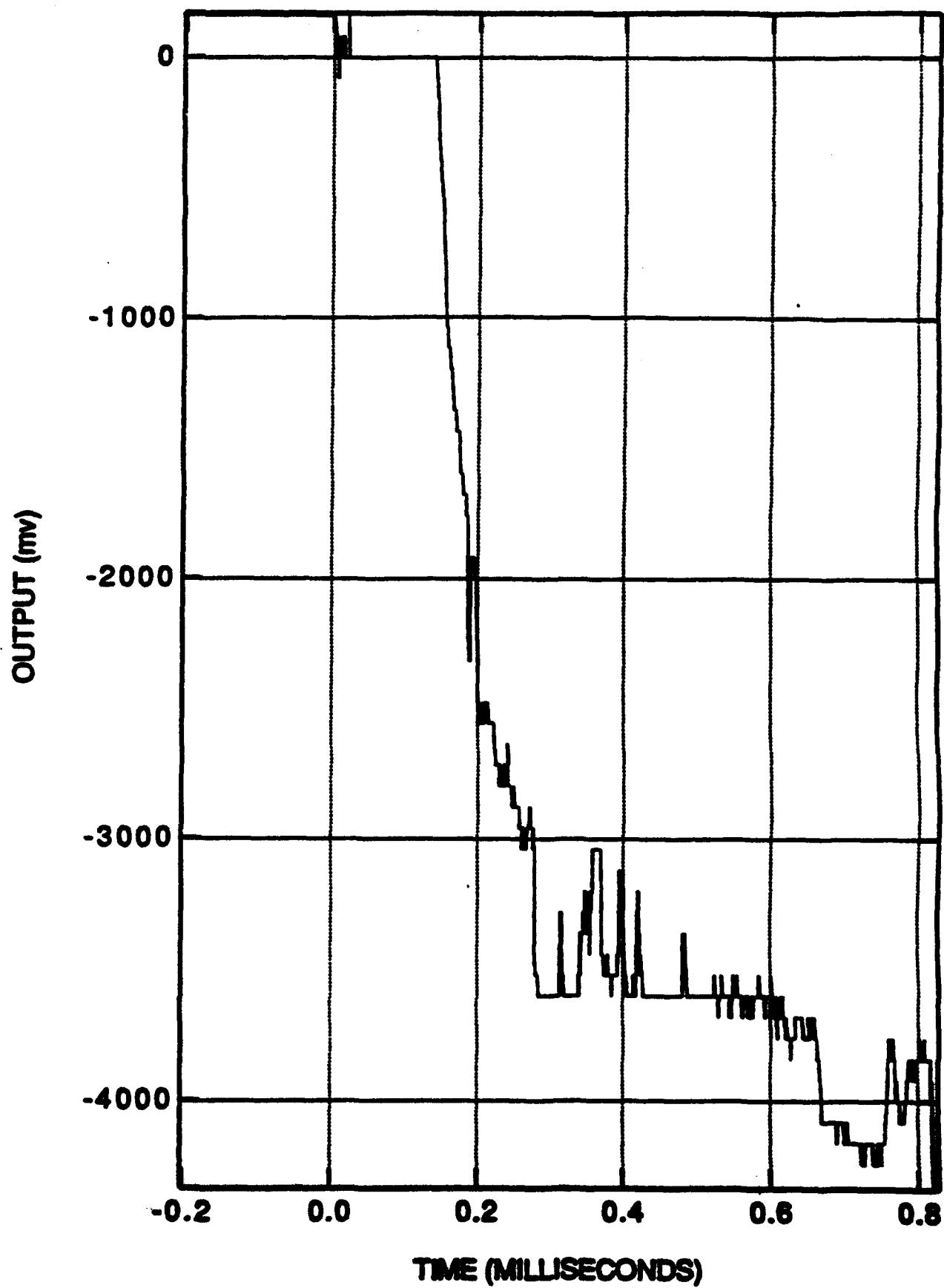
RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT   
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES   
HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE   
VELOCITY: PEAK 5787 FPS  
STABLE ☐ DECAYING ☒ INCREASING ☐  
OVERALL RESULT POSITIVE ☐ NEGATIVE ☒  
TEST PERSONNEL EZ & JE

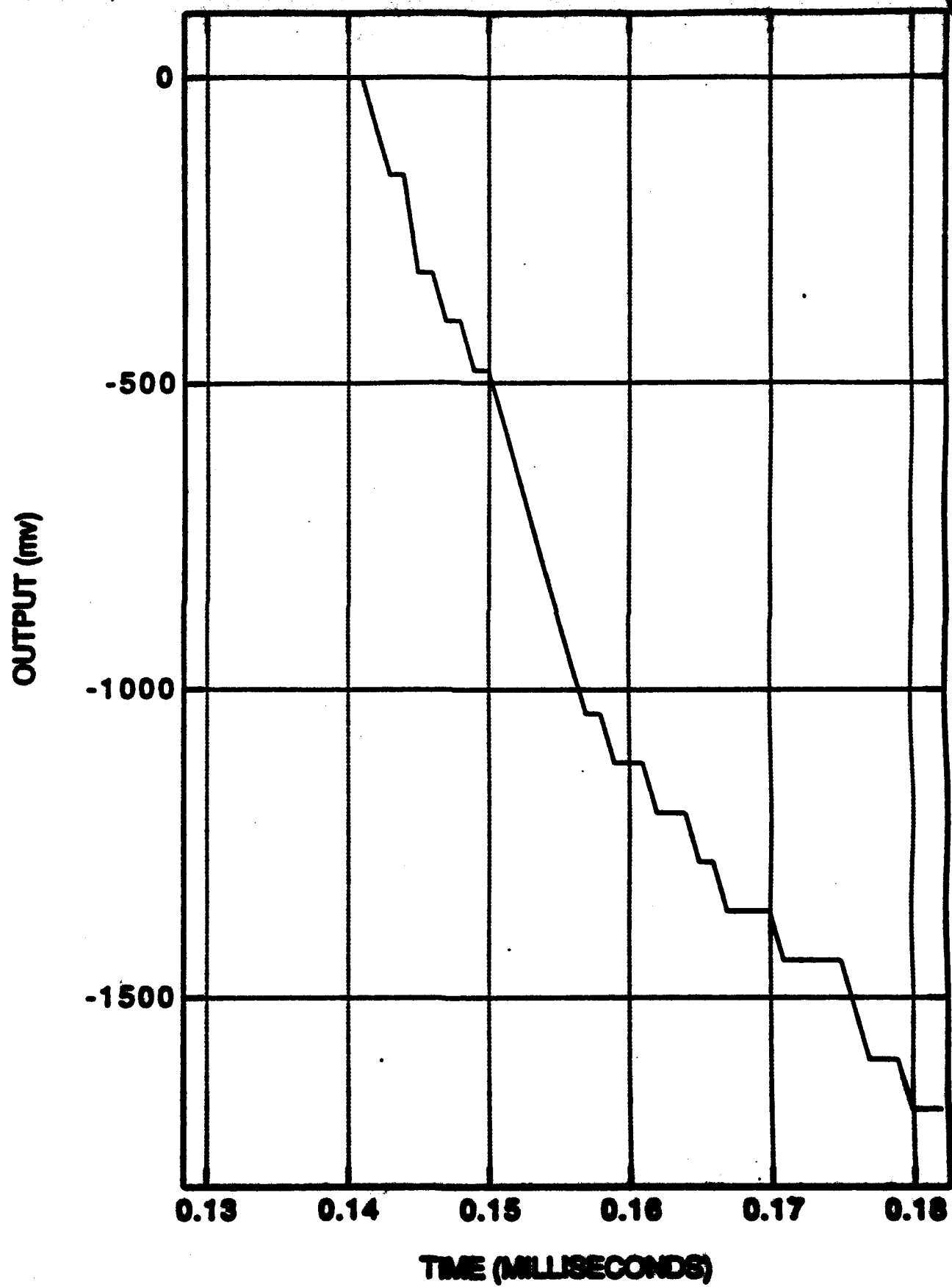
ADDITIONAL COMMENTS:



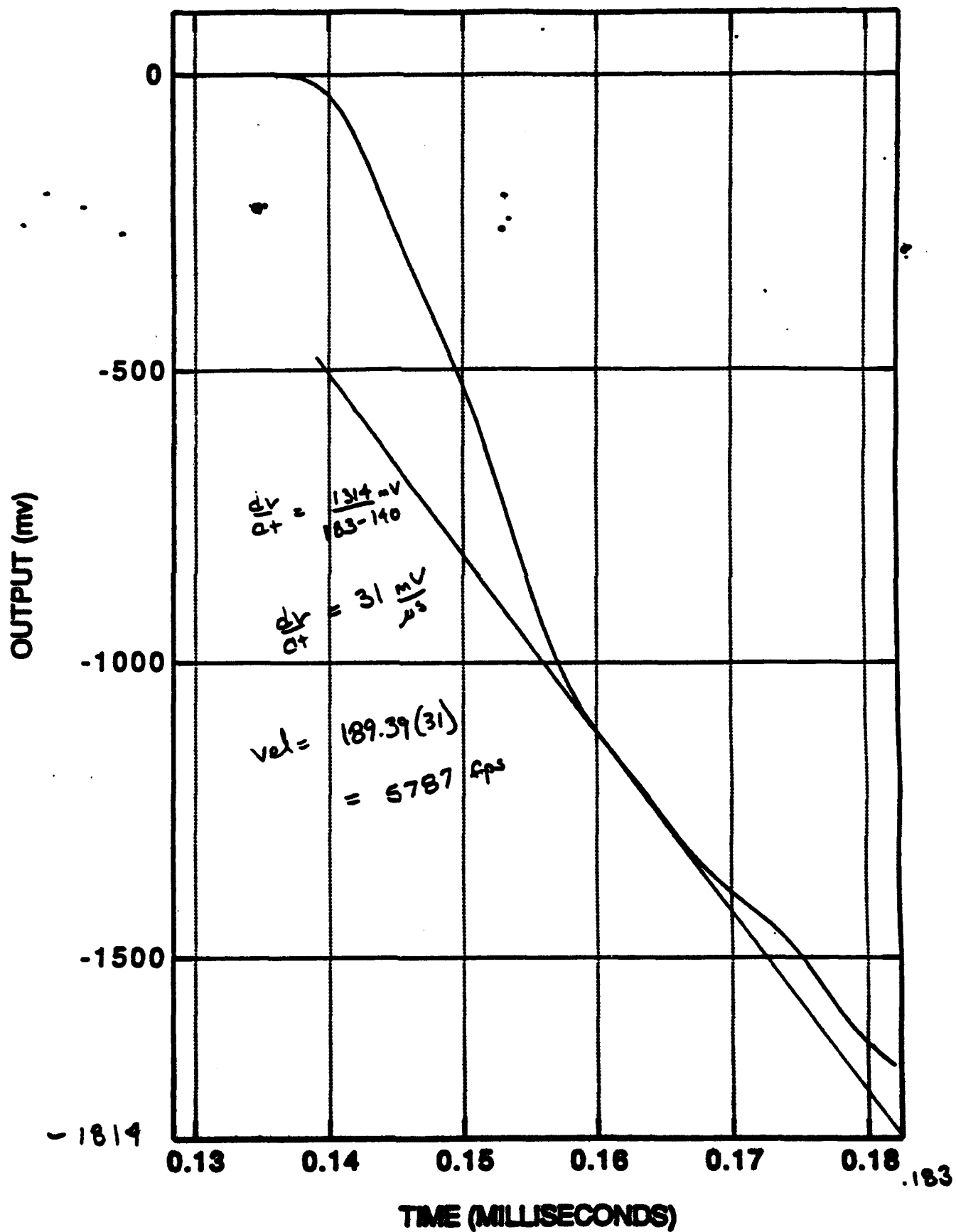
# GAP TEST 68



# GAP TEST 08



# GAP TEST 68



GAP TEST  
PROJECT 01-5132-001

TEST NO. 69

DATE 10/15/92

SOIL SAMPLE NO. EP-01-087-0-1'

TEMPERATURE 88°

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT       

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES       

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE       

VELOCITY: PEAK 3626 FPS

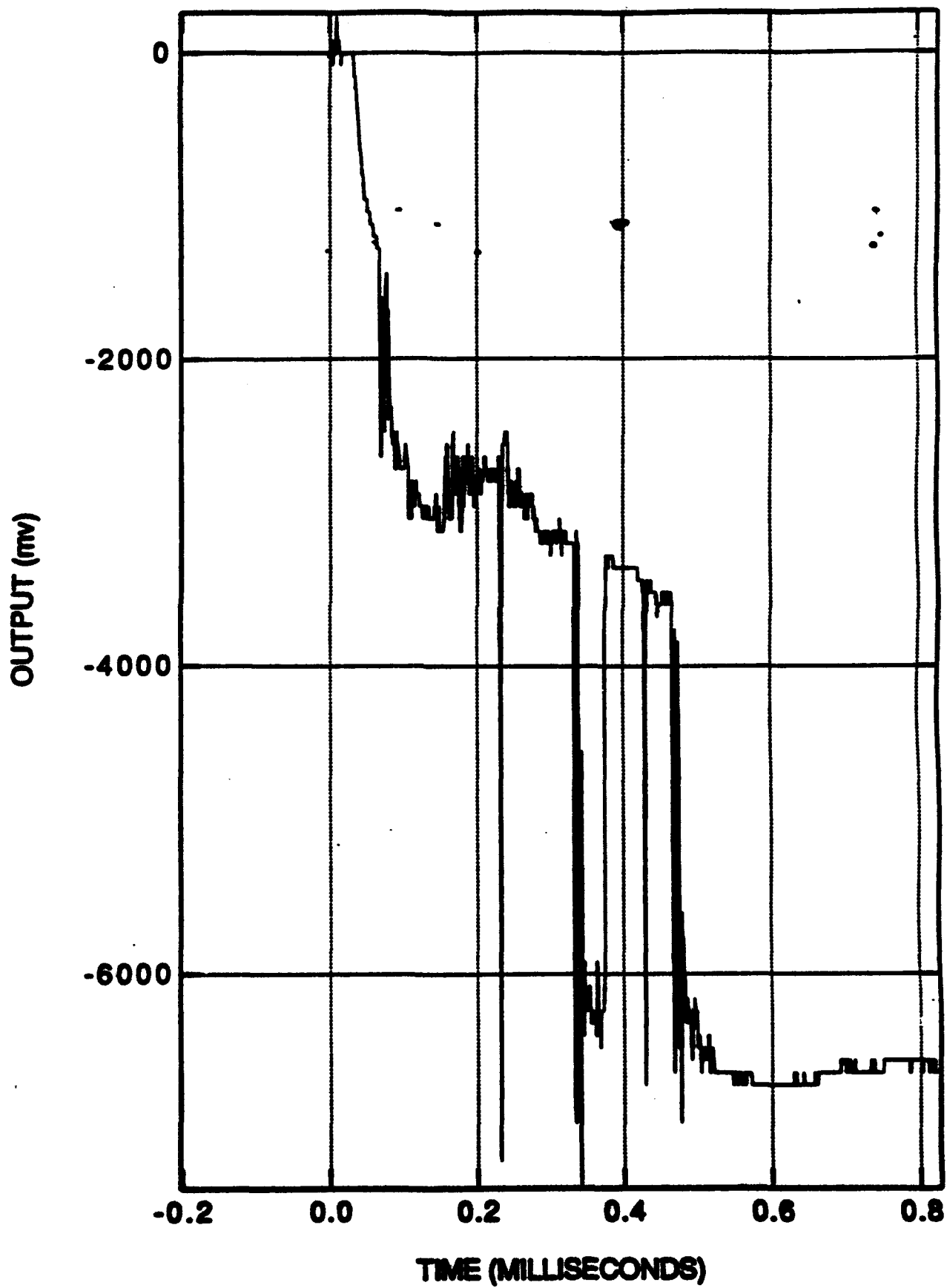
STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

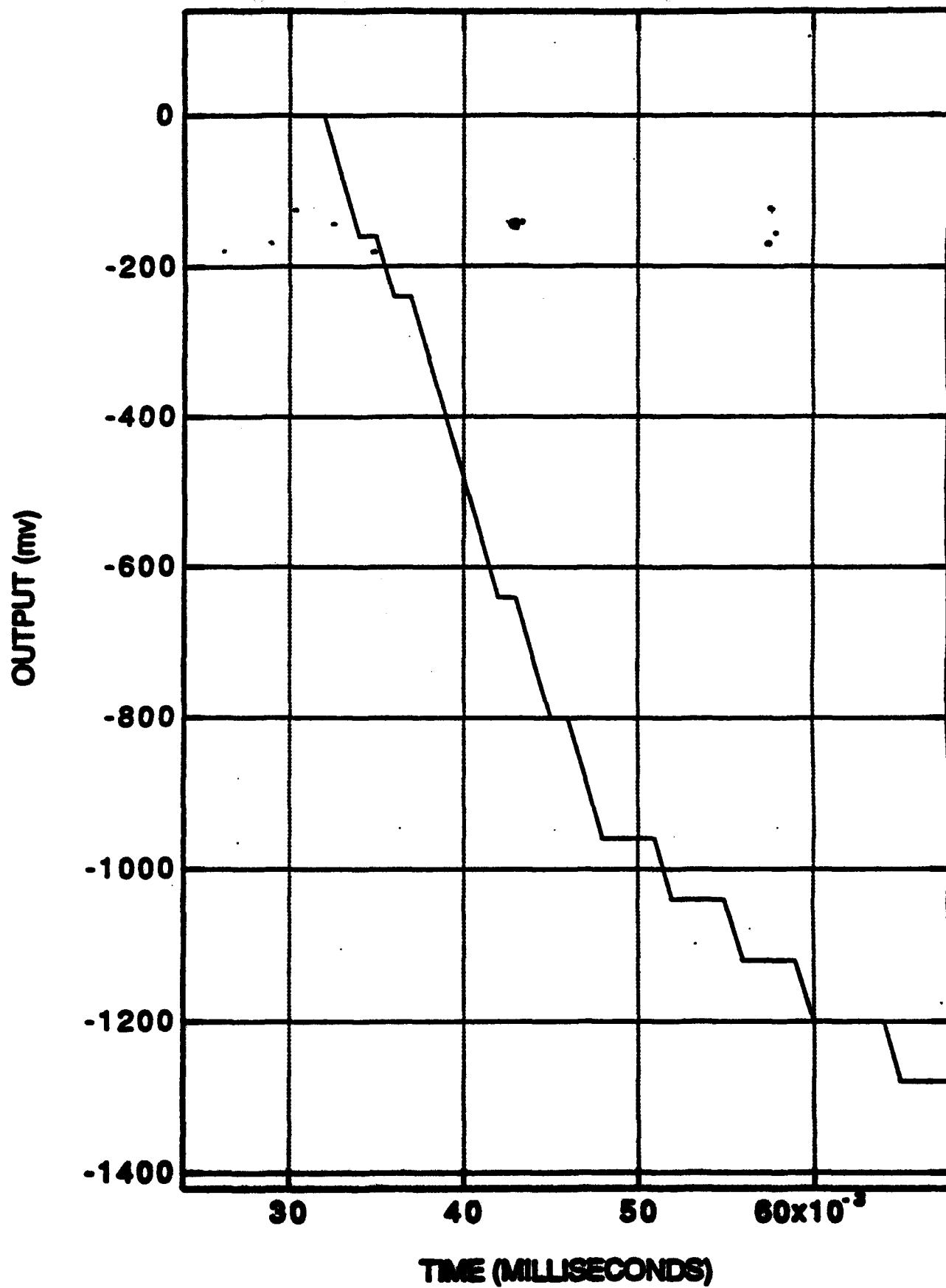
TEST PERSONNEL EZ & JF

ADDITIONAL COMMENTS:

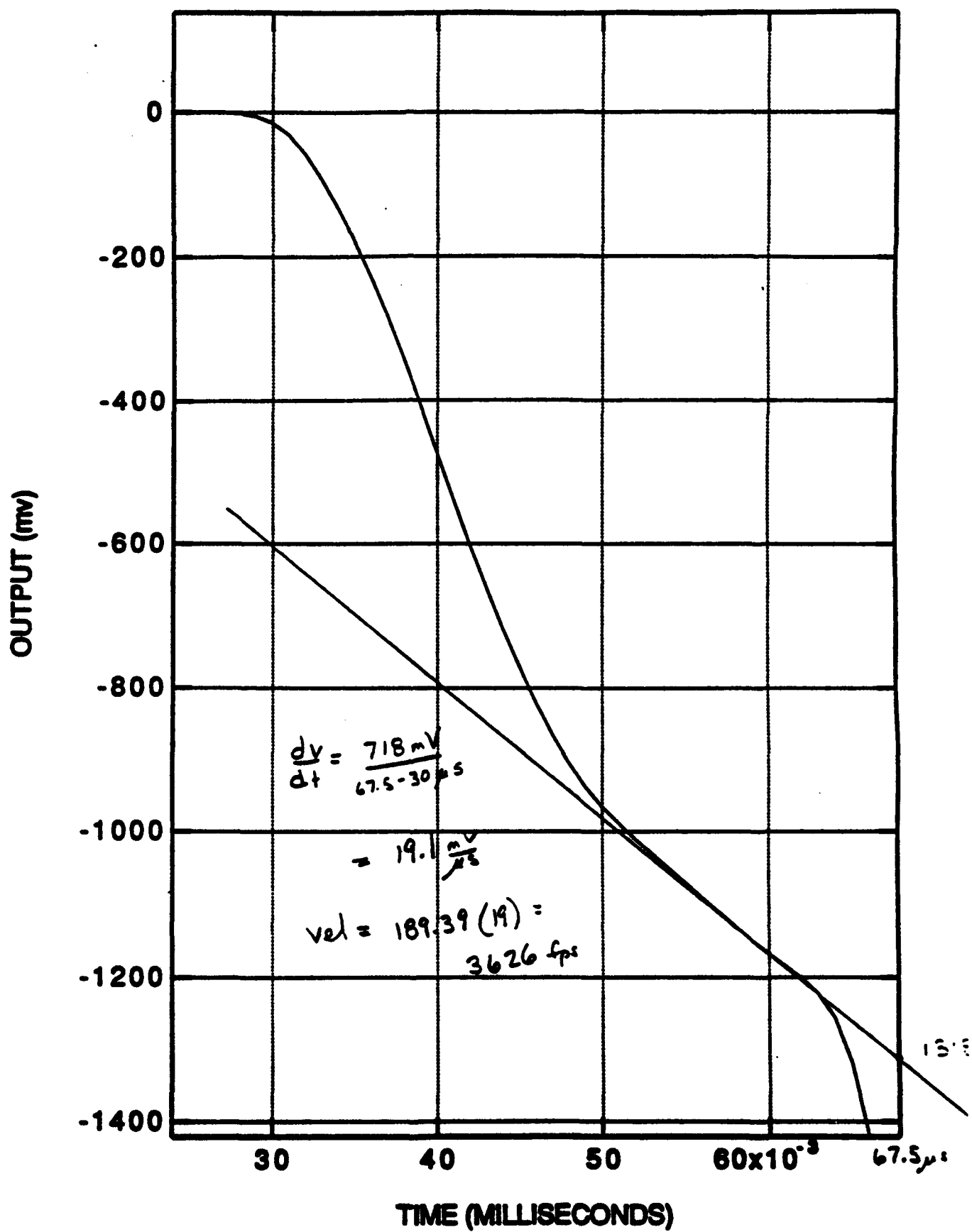
# GAP TEST 69



# GAP TEST 69



# GAP TEST 69



GAP TEST  
PROJECT 01-5132-001

TEST NO. 7C

DATE 10/16/92

SOIL SAMPLE NO. EP-01-11B-C-3'

TEMPERATURE EC°

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE

VELOCITY: PEAK ND FPS

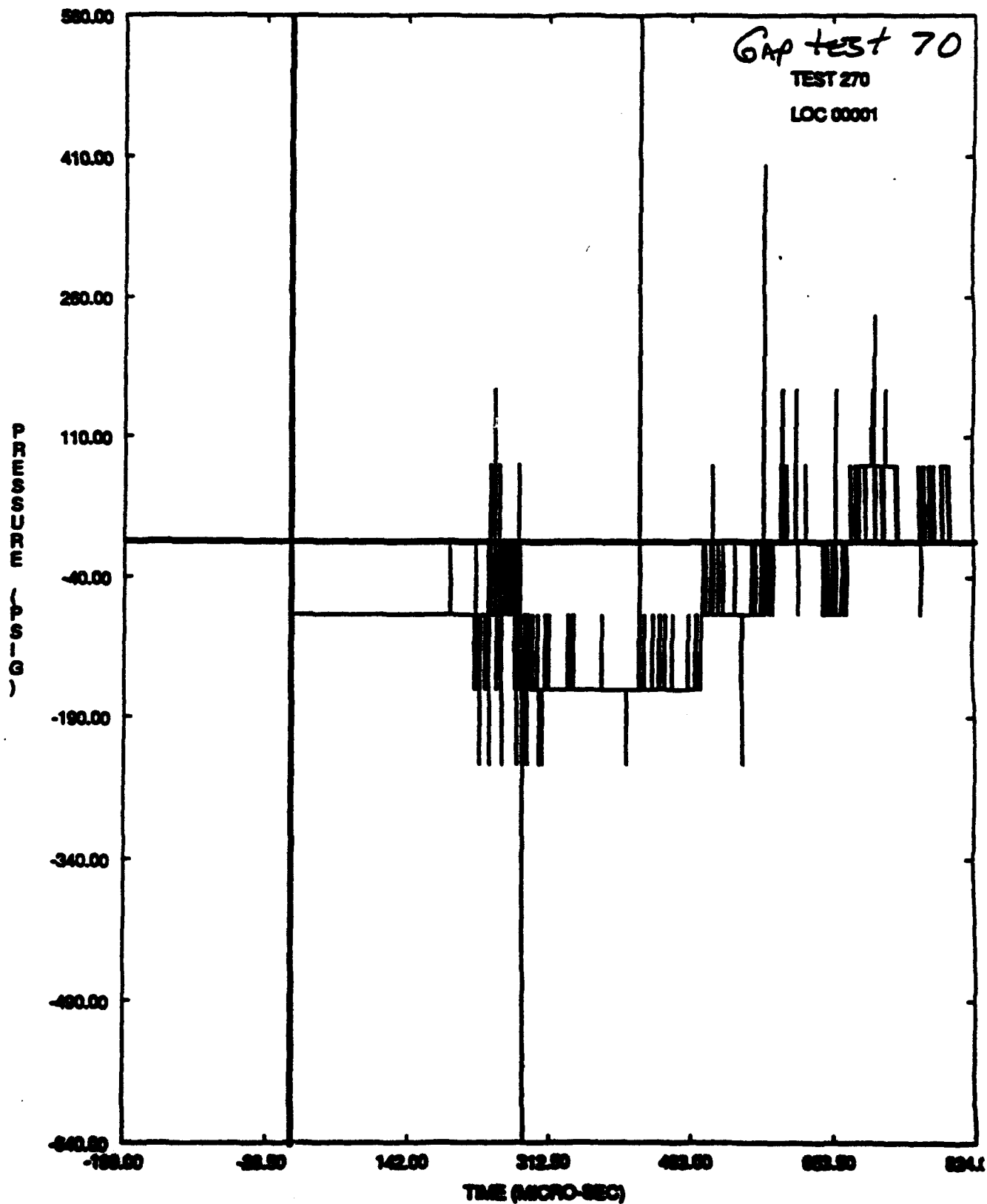
STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:





10/16/92

GAP TEST  
PROJECT 01-5132-001

TEST NO. 71 DATE 10/16/92

SOIL SAMPLE NO. EP-01-118-0-3' TEMPERATURE 80

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE

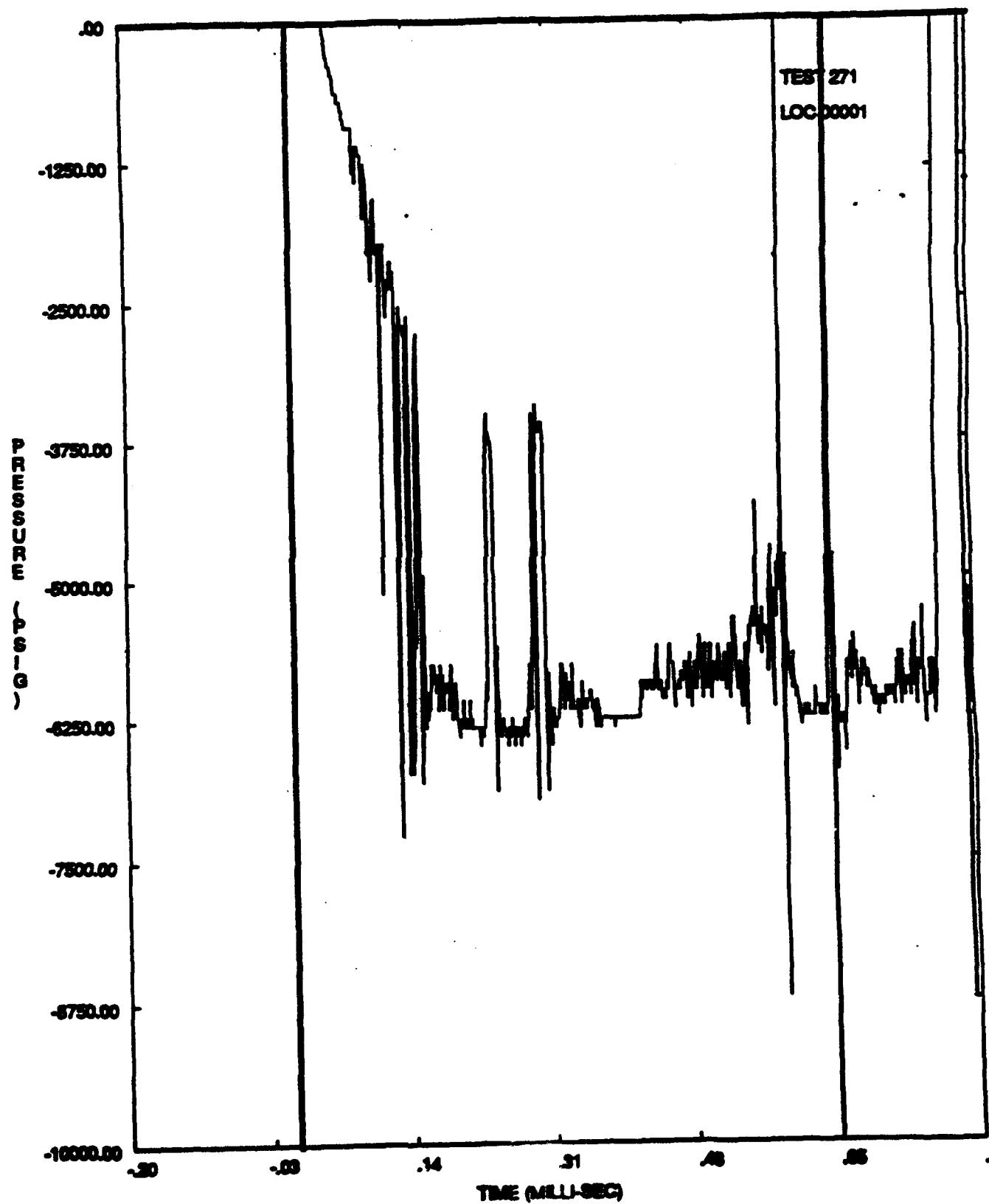
VELOCITY: PEAK 7215 FPS

STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

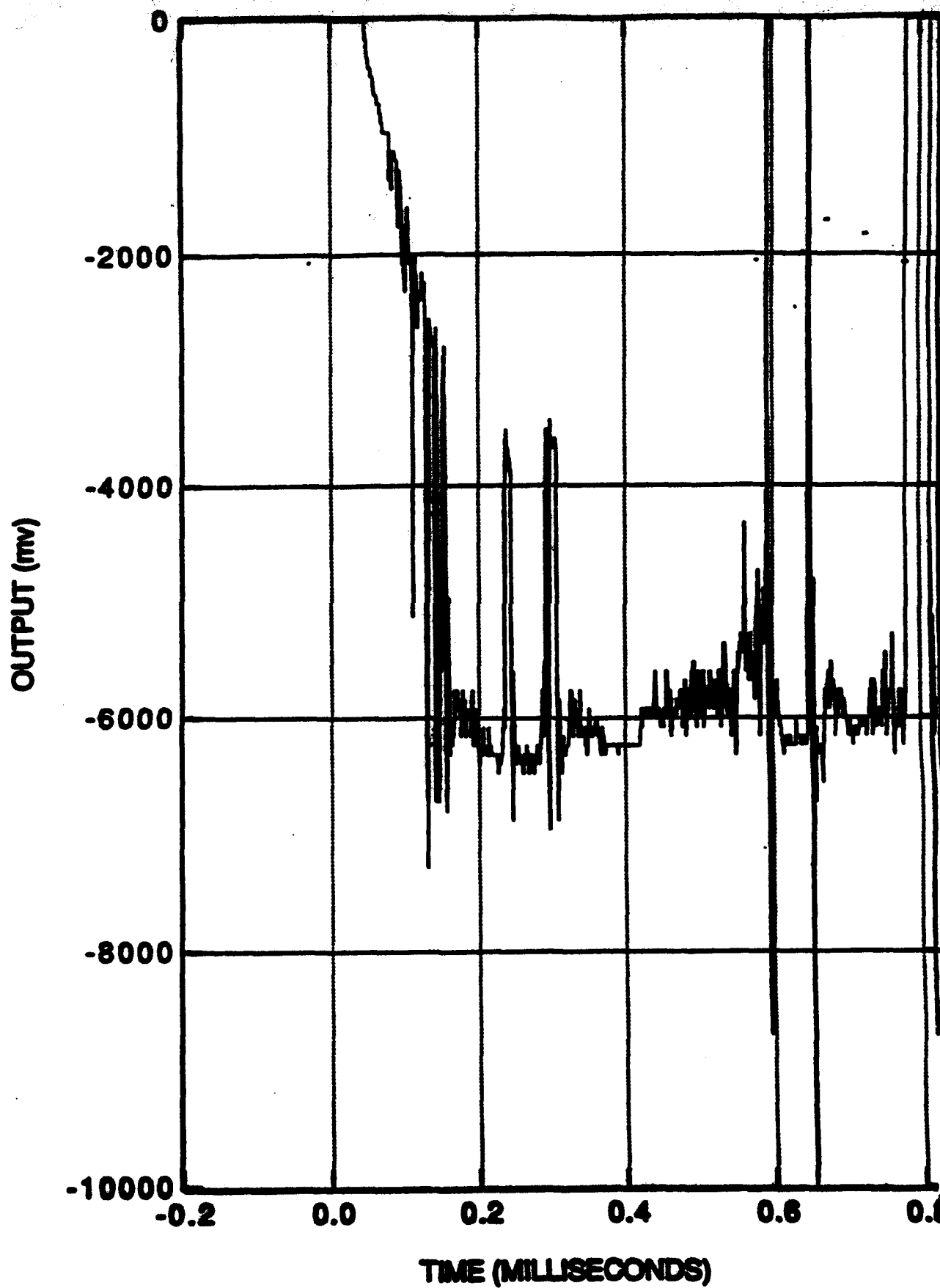
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

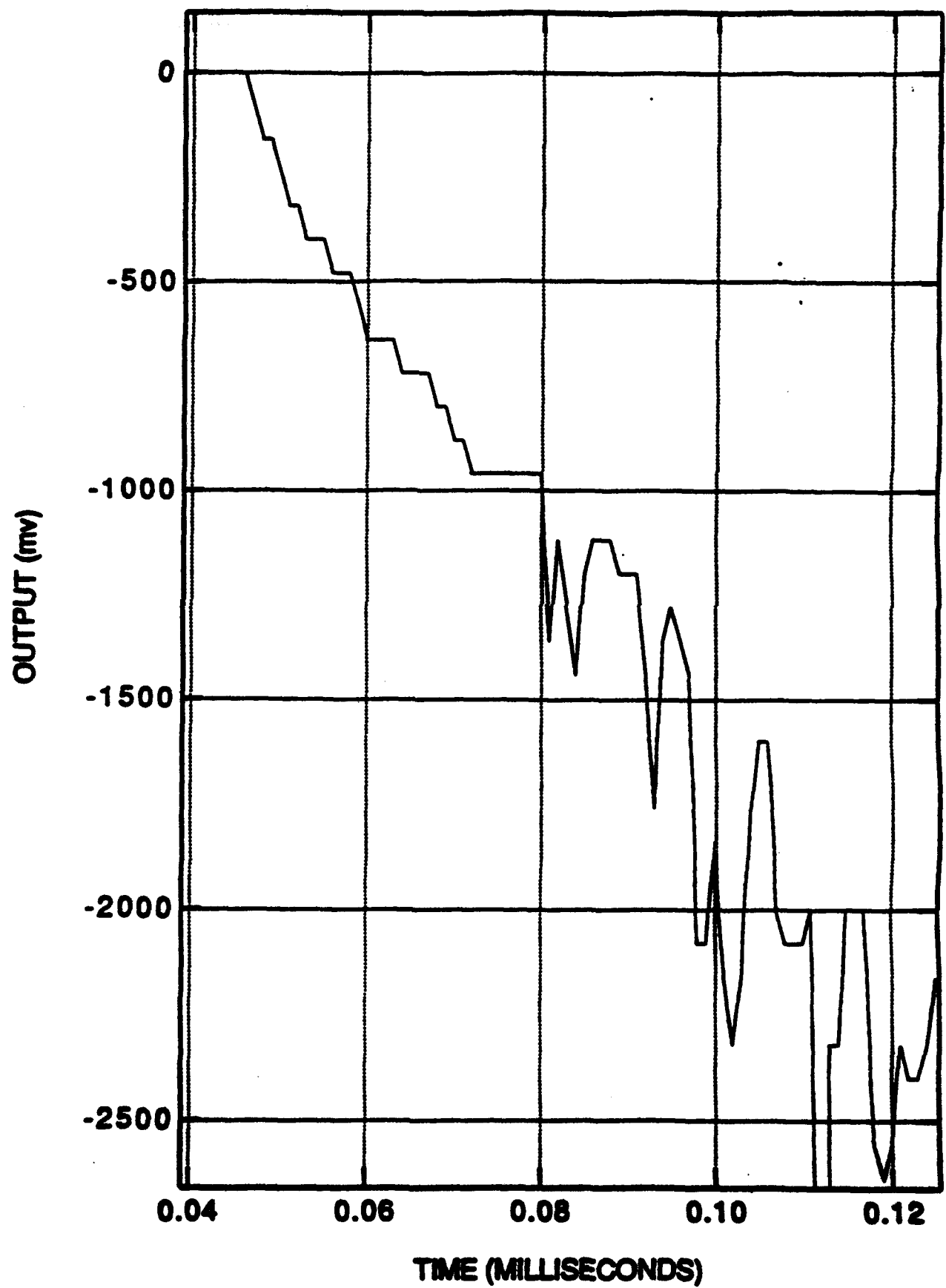


10/16/92

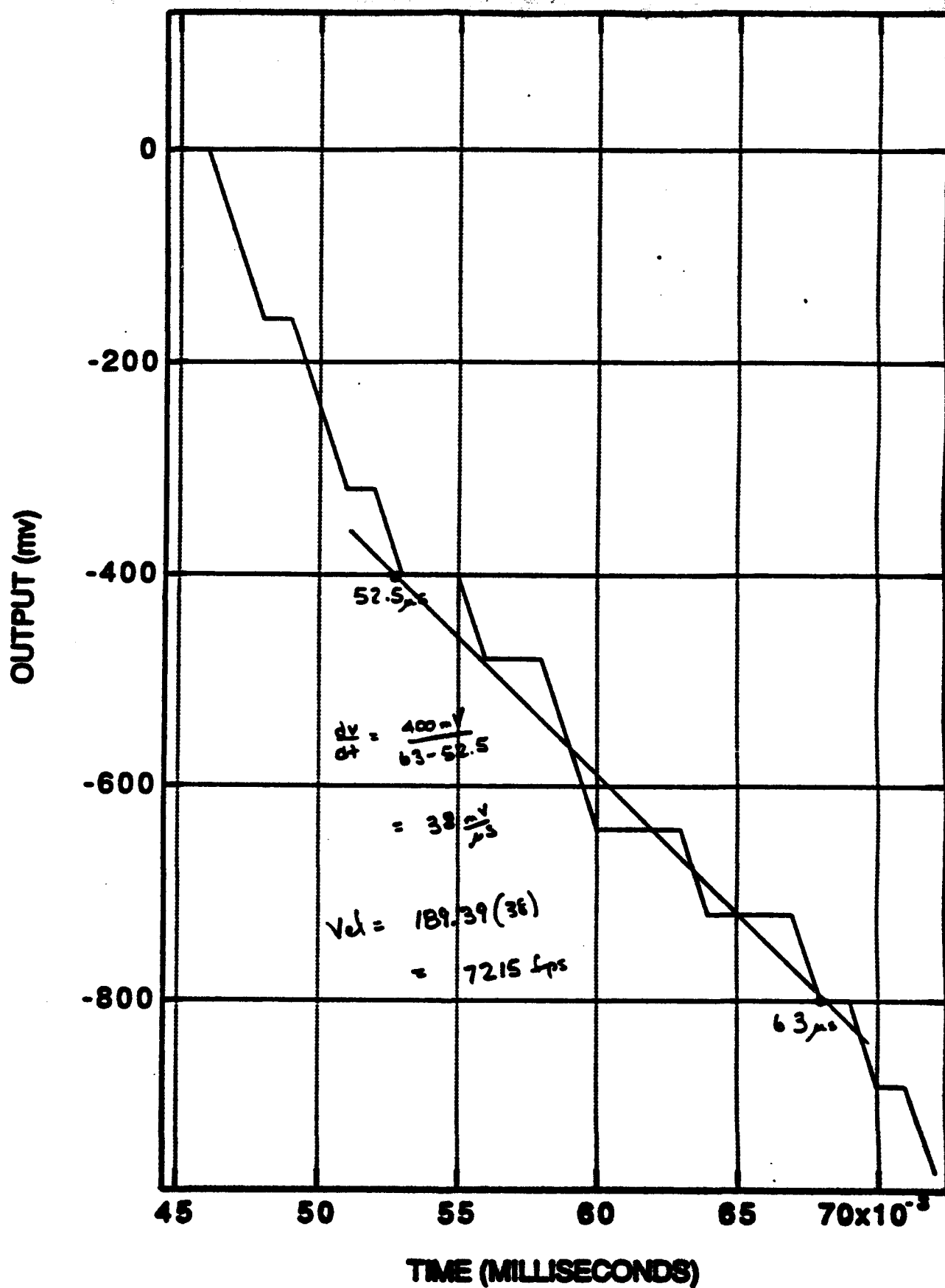
# GAP TEST 71



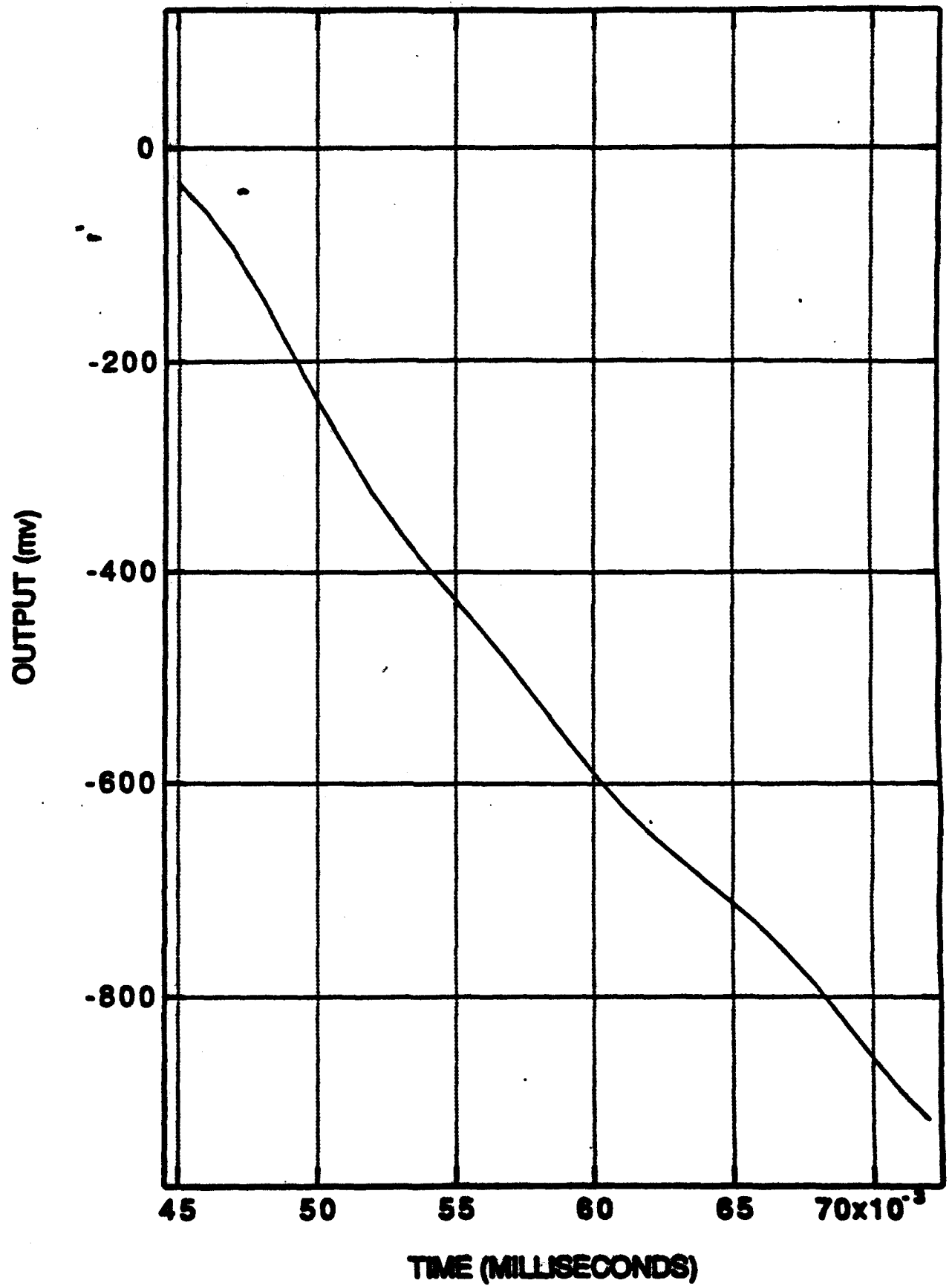
# GAP TEST 71



# GAP TEST 71



# GAP TEST 71



GAP TEST  
PROJECT 01-5132-001

TEST NO. 72 DATE 10/16/92  
SOIL SAMPLE NO. EP-DT11E-C-3' TEMPERATURE 80°

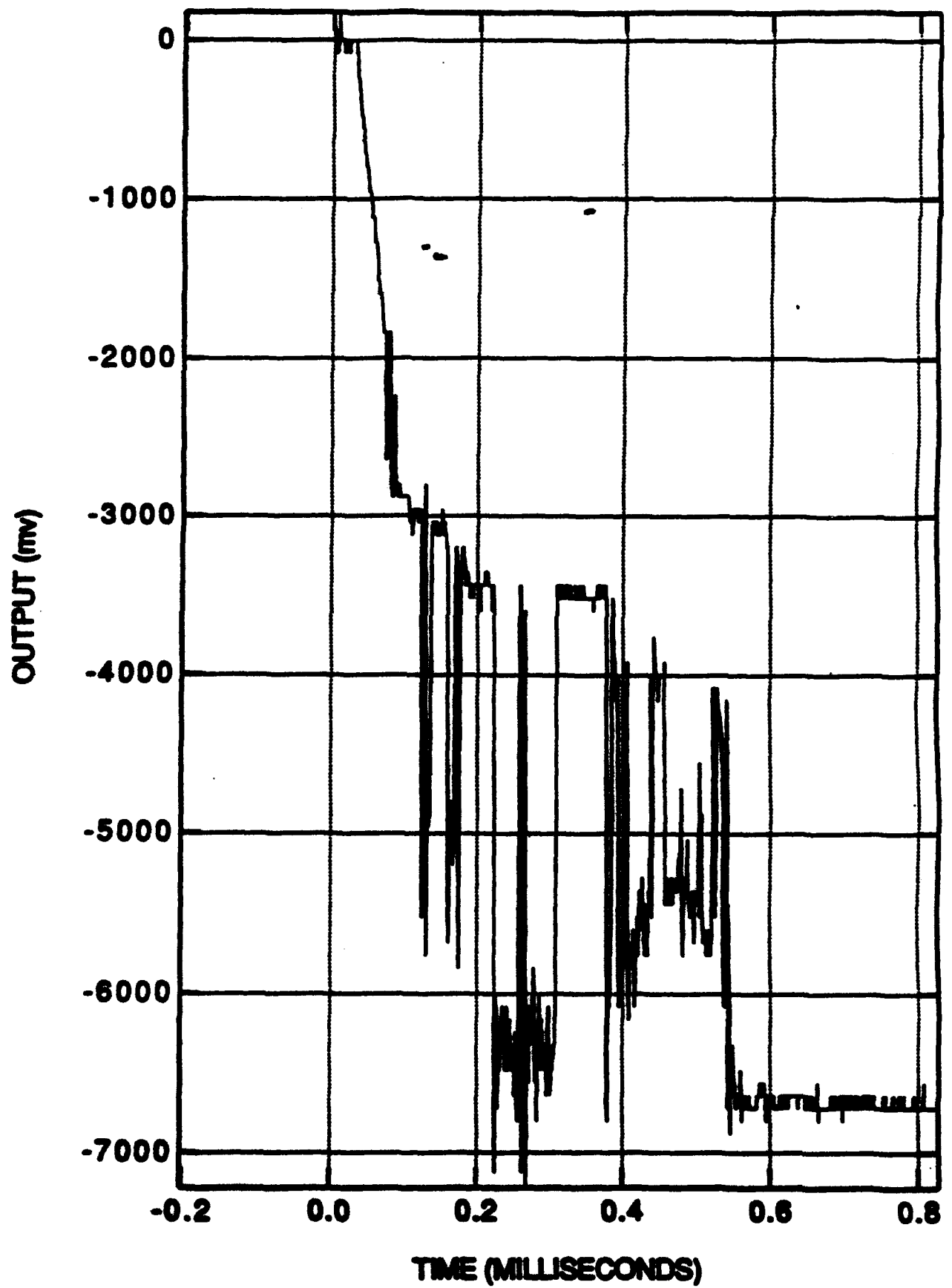
RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT ☐  
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES ☐  
HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE ☐  
VELOCITY: PEAK 7576 FPS  
STABLE ☐ DECAYING ☒ INCREASING ☐  
OVERALL RESULT POSITIVE ☐ NEGATIVE ☒  
TEST PERSONNEL EZ & JE.

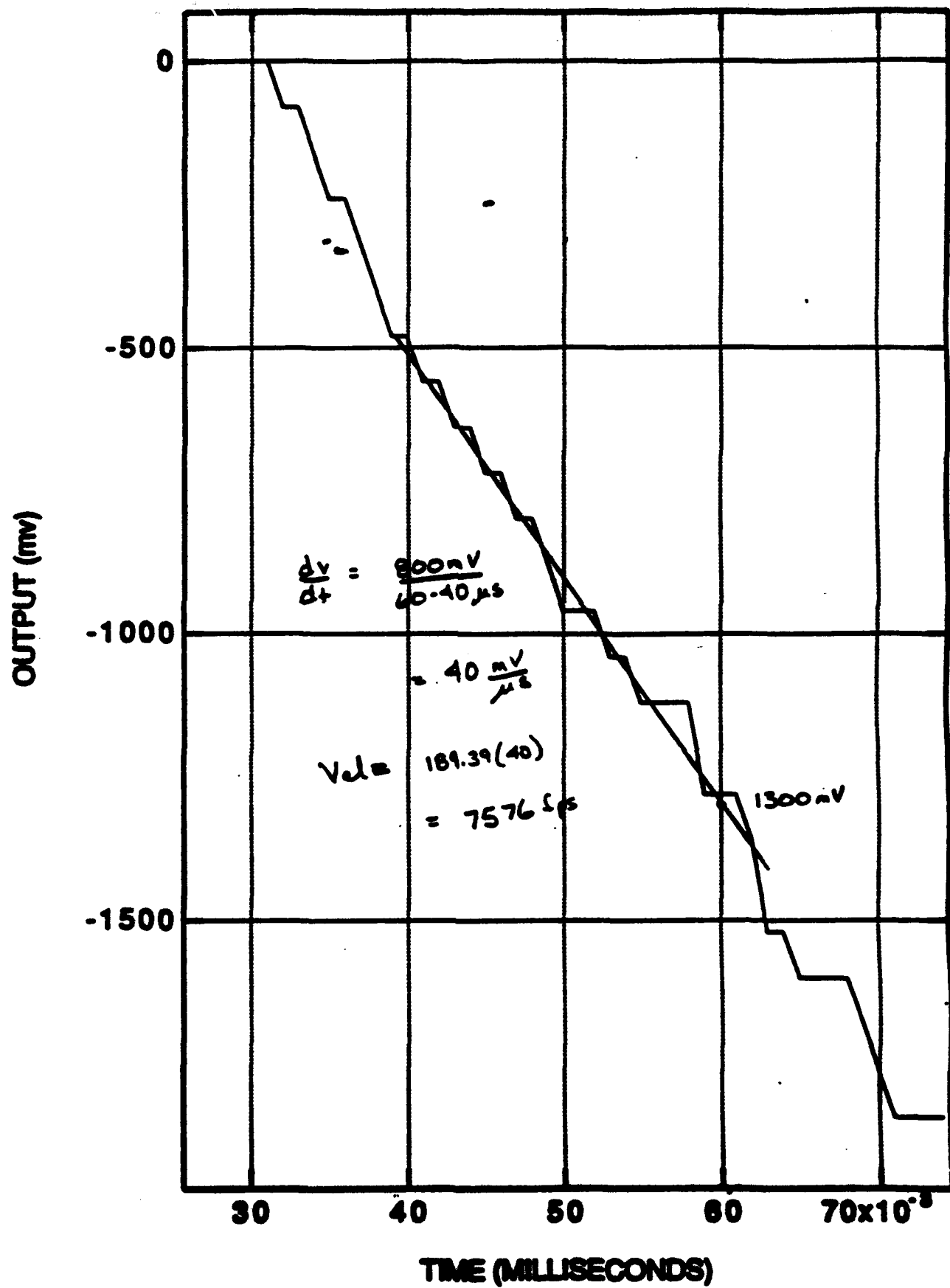
ADDITIONAL COMMENTS:



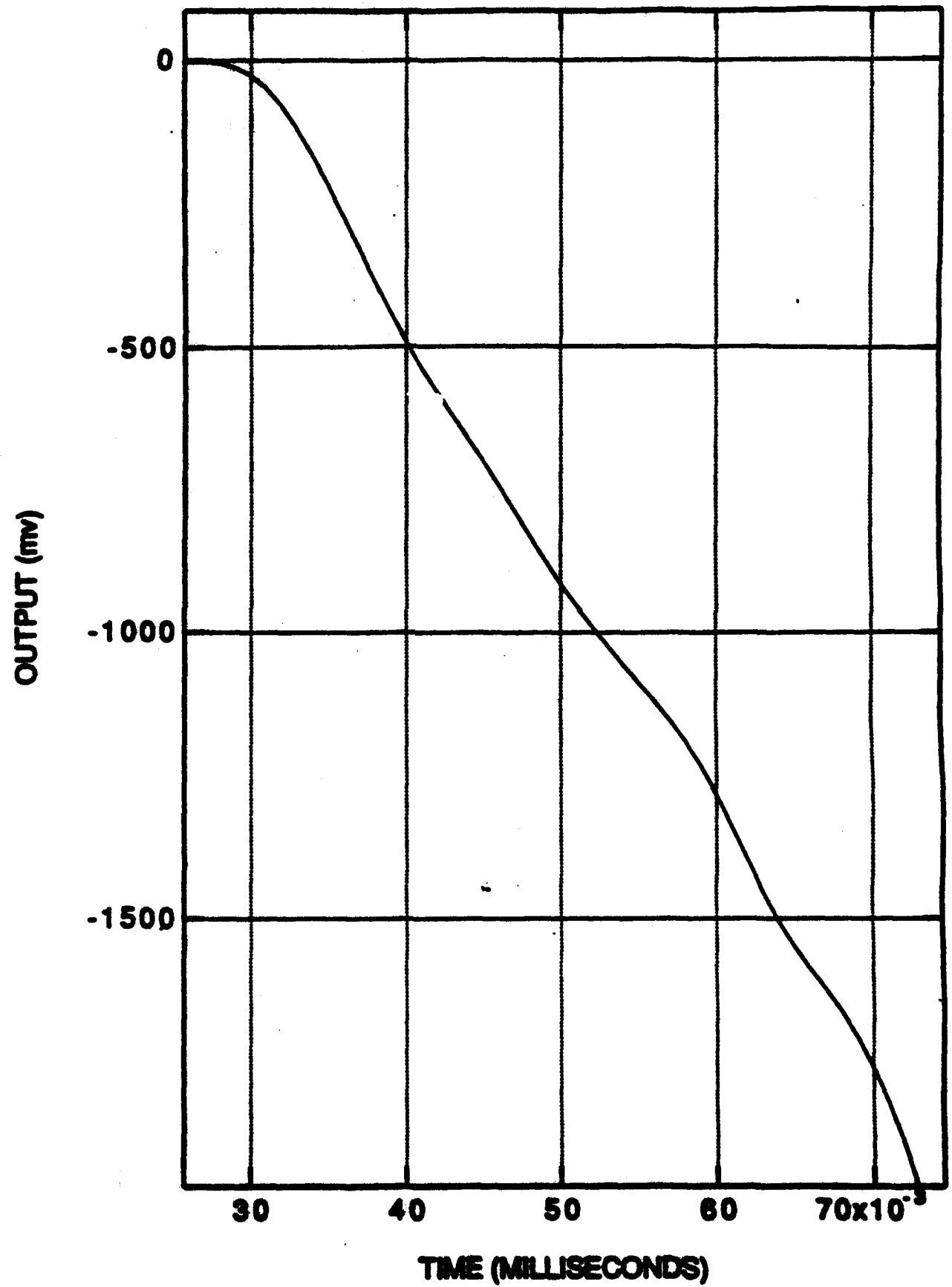
# GAP TEST 72



# GAP TEST 72



# GAP TEST 72



GAP TEST  
PROJECT 01-8132-001

TEST NO. 73 DATE 10/16/92

SOIL SAMPLE NO. SB-01-006-0-1' TEMPERATURE 82°

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE

VELOCITY: PEAK 3106 FPS

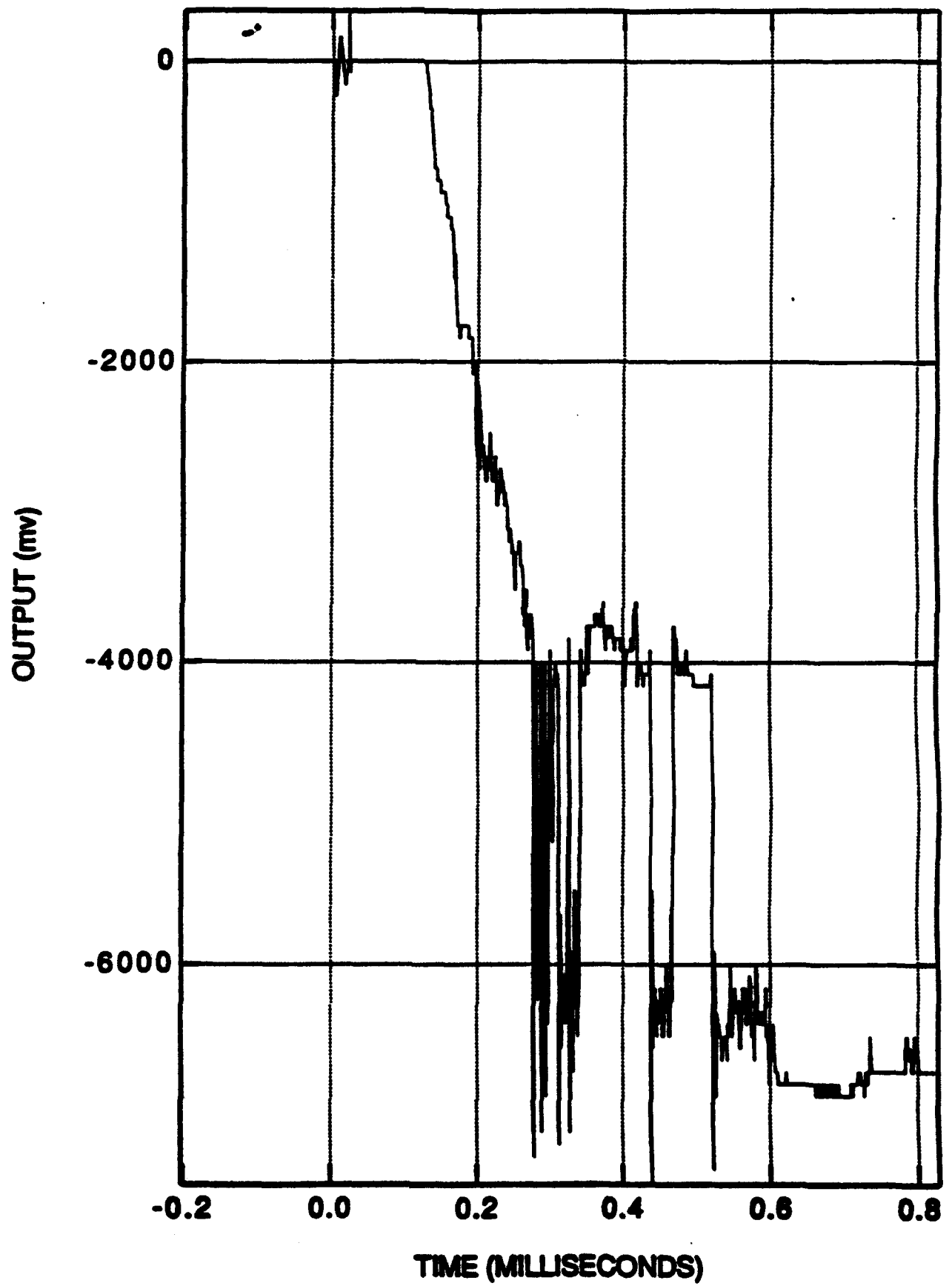
STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

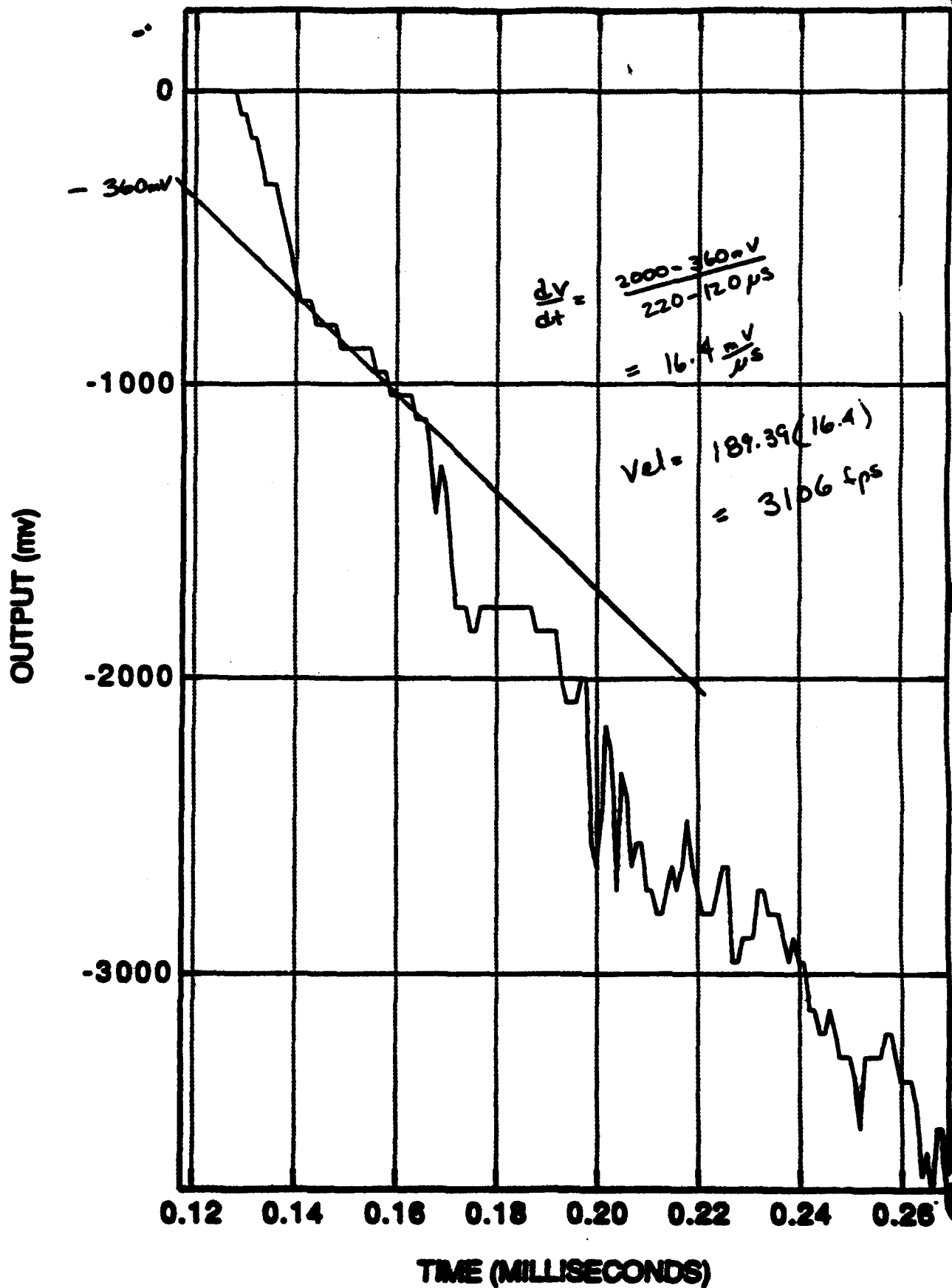
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

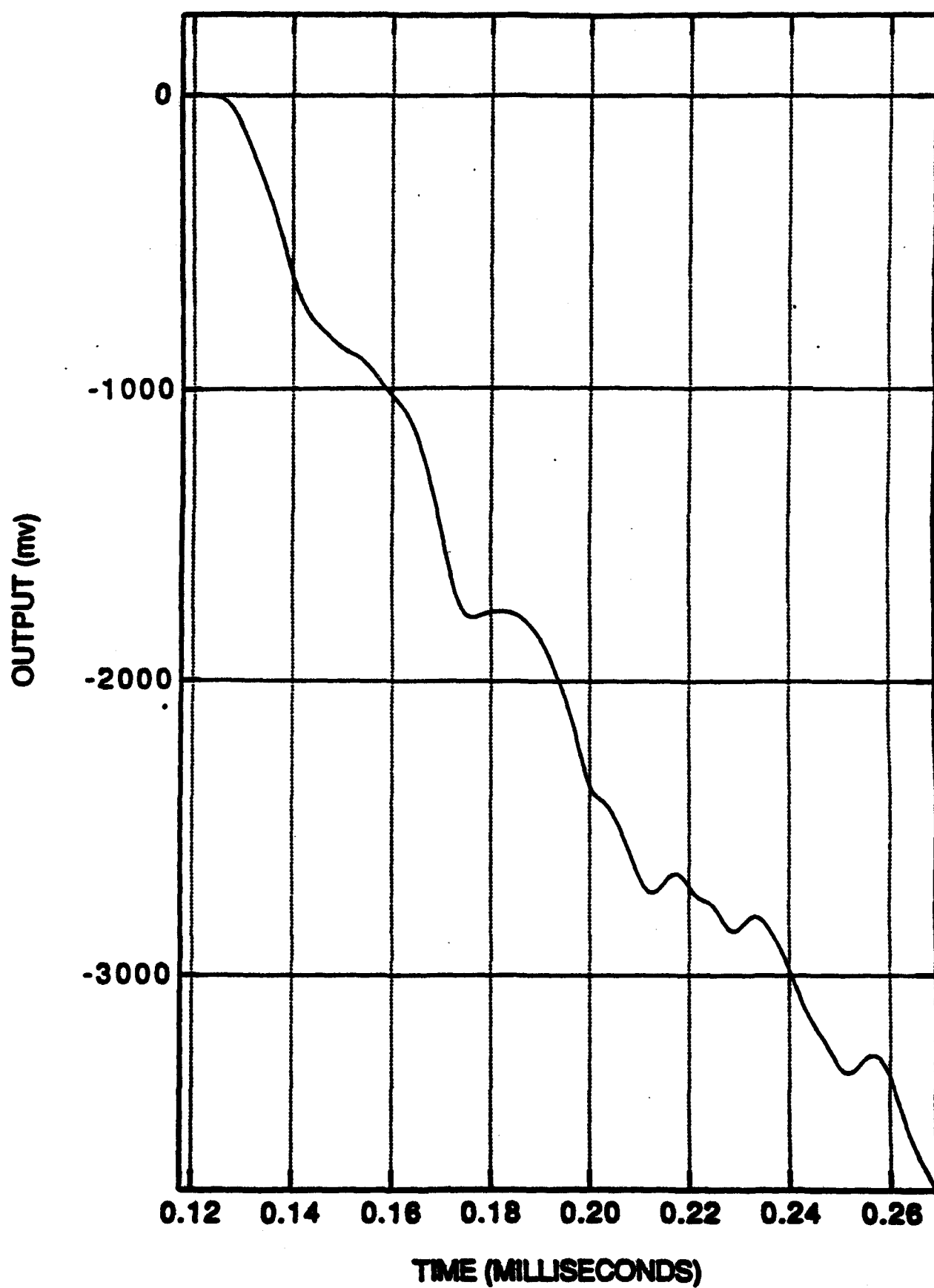
# GAP TEST 73



# GAP TEST 73



# GAP TEST 73



GAP TEST  
PROJECT 01-5132-001

TEST NO. 74 DATE 10/16/92  
SOIL SAMPLE NO. SB-01-006-0-1' TEMPERATURE 90°

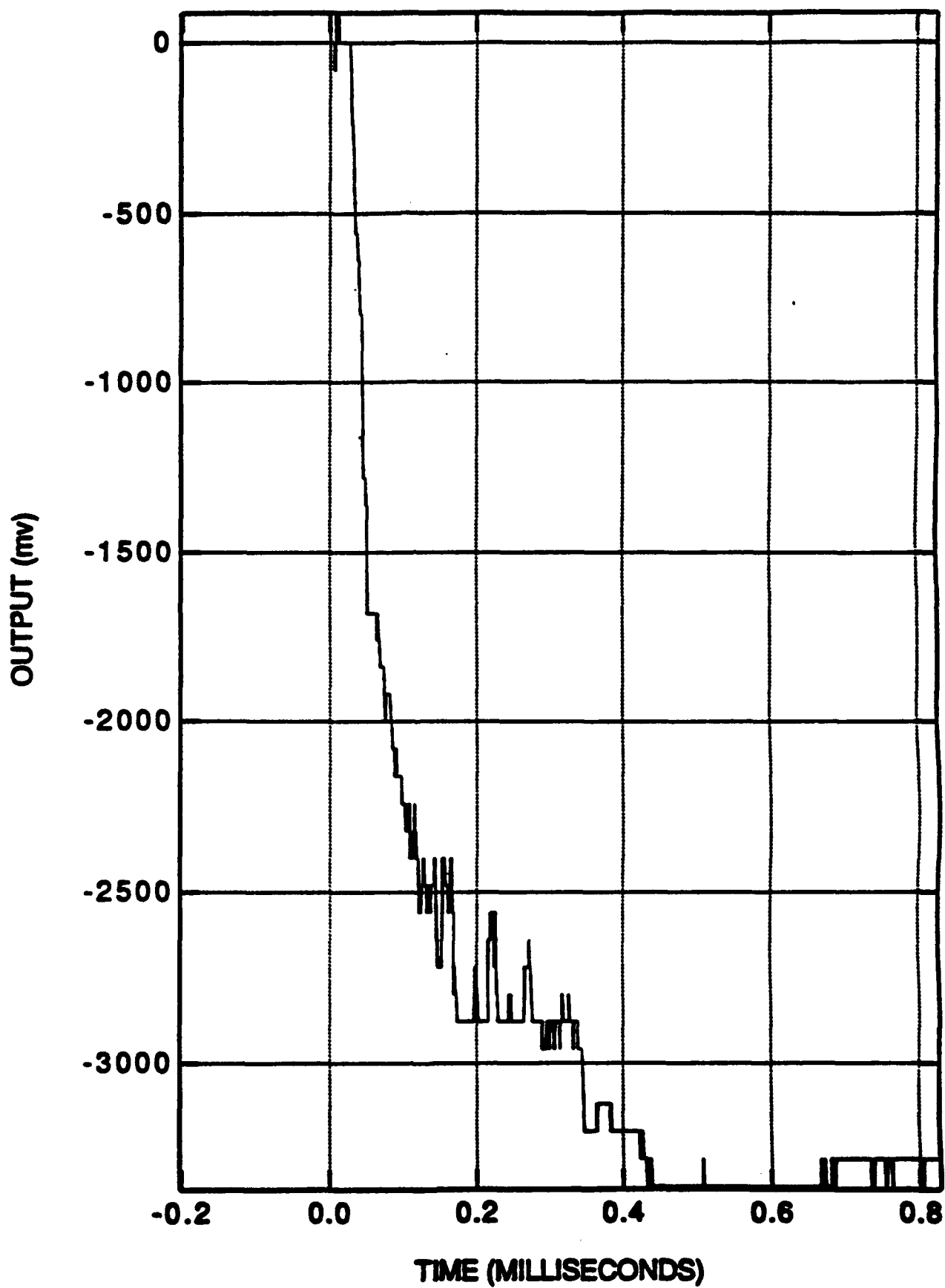
RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT         
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES         
HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE         
VELOCITY: PEAK 6729 FPS  
STABLE ☐ DECAYING ☒ INCREASING ☐  
OVERALL RESULT POSITIVE ☐ NEGATIVE ☒  
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:



# GAP TEST 74



GAP TEST  
PROJECT 01-5132-001

TEST NO. 91

DATE 10-20-92

SOIL SAMPLE NO. EP-C1-113

TEMPERATURE 86

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT           

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES           

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE           

VELOCITY: PEAK 6313 FPS

STABLE ☐ DECAYING ☐ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

GAP TEST  
PROJECT 01-5132-001

TEST NO. 73

DATE 10/16/92

SOIL SAMPLE NO. SB-01-006-0-1'

TEMPERATURE 82°

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT           

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES           

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE           

VELOCITY: PEAK 3106 FPS

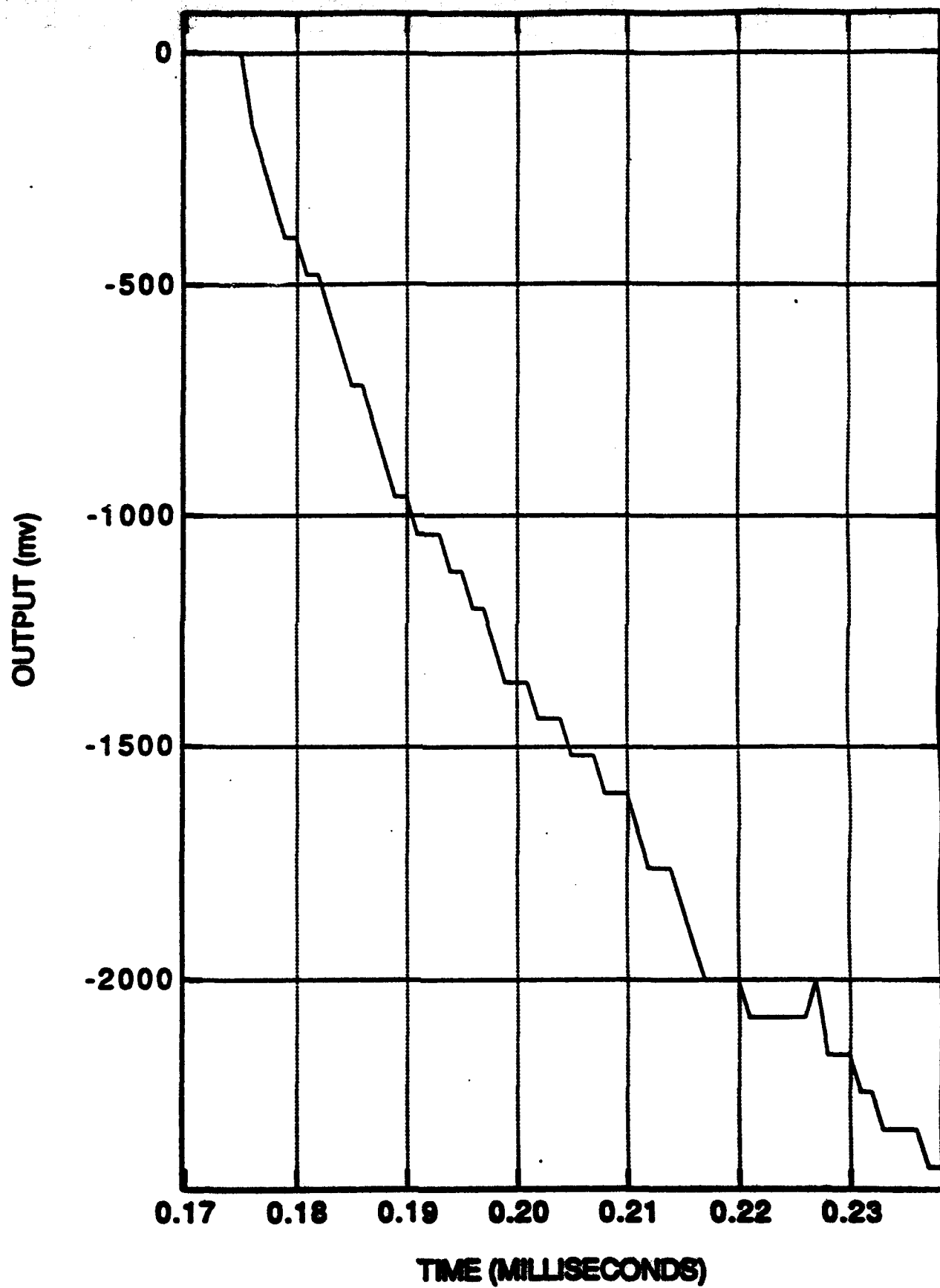
STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

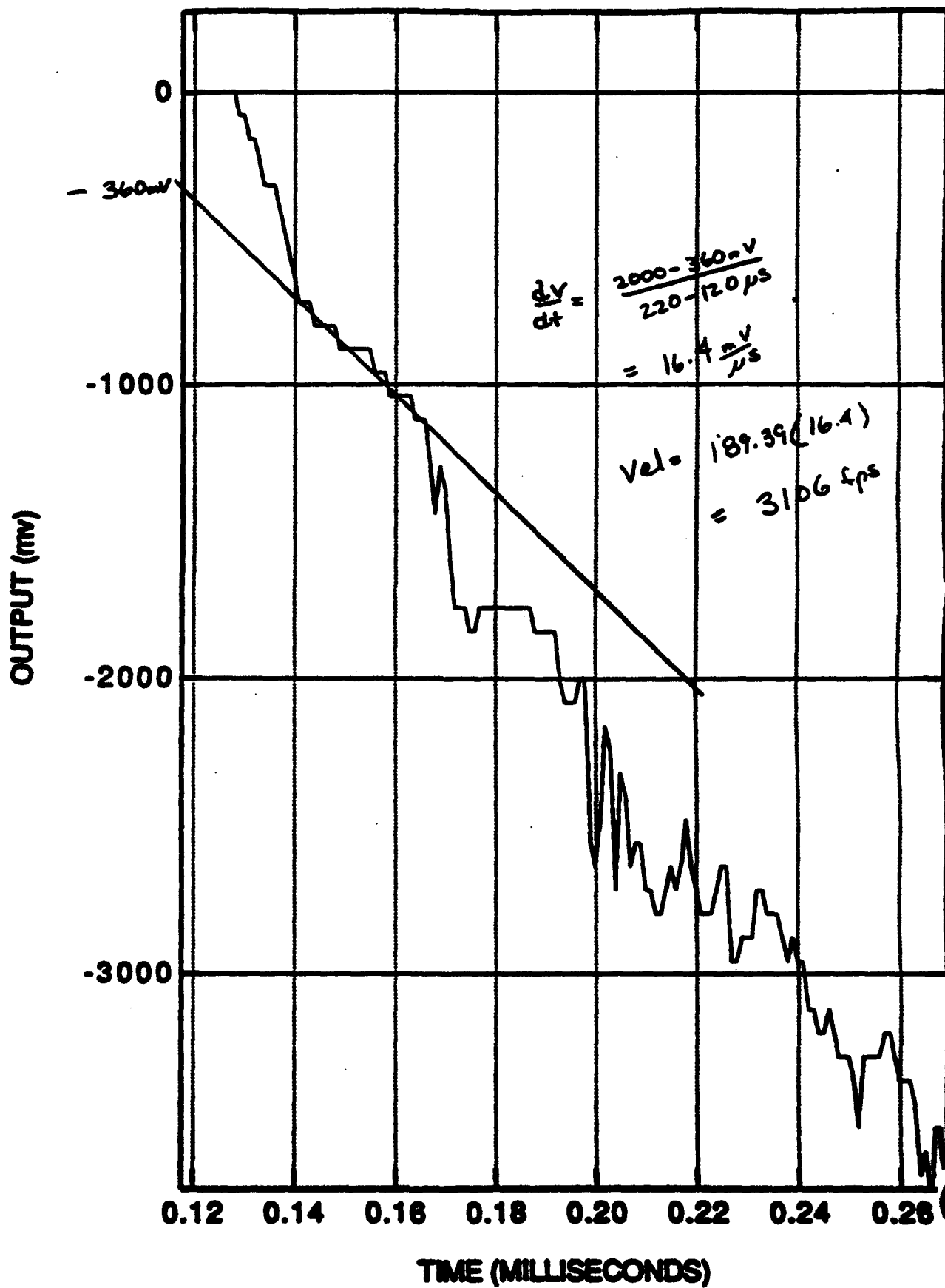
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

# GAP TEST 91



# GAP TEST 73



GAP TEST  
PROJECT 01-5132-001

TEST NO. 92

DATE 10-20-92

SOIL SAMPLE NO. EP-01-113

TEMPERATURE 84°

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE

VELOCITY: PEAK 2794 FPS

STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

GAP TEST  
PROJECT 01-5132-001

TEST NO. 74 DATE 10/16/92  
SOIL SAMPLE NO. SB-01-006-0-1' TEMPERATURE 90°

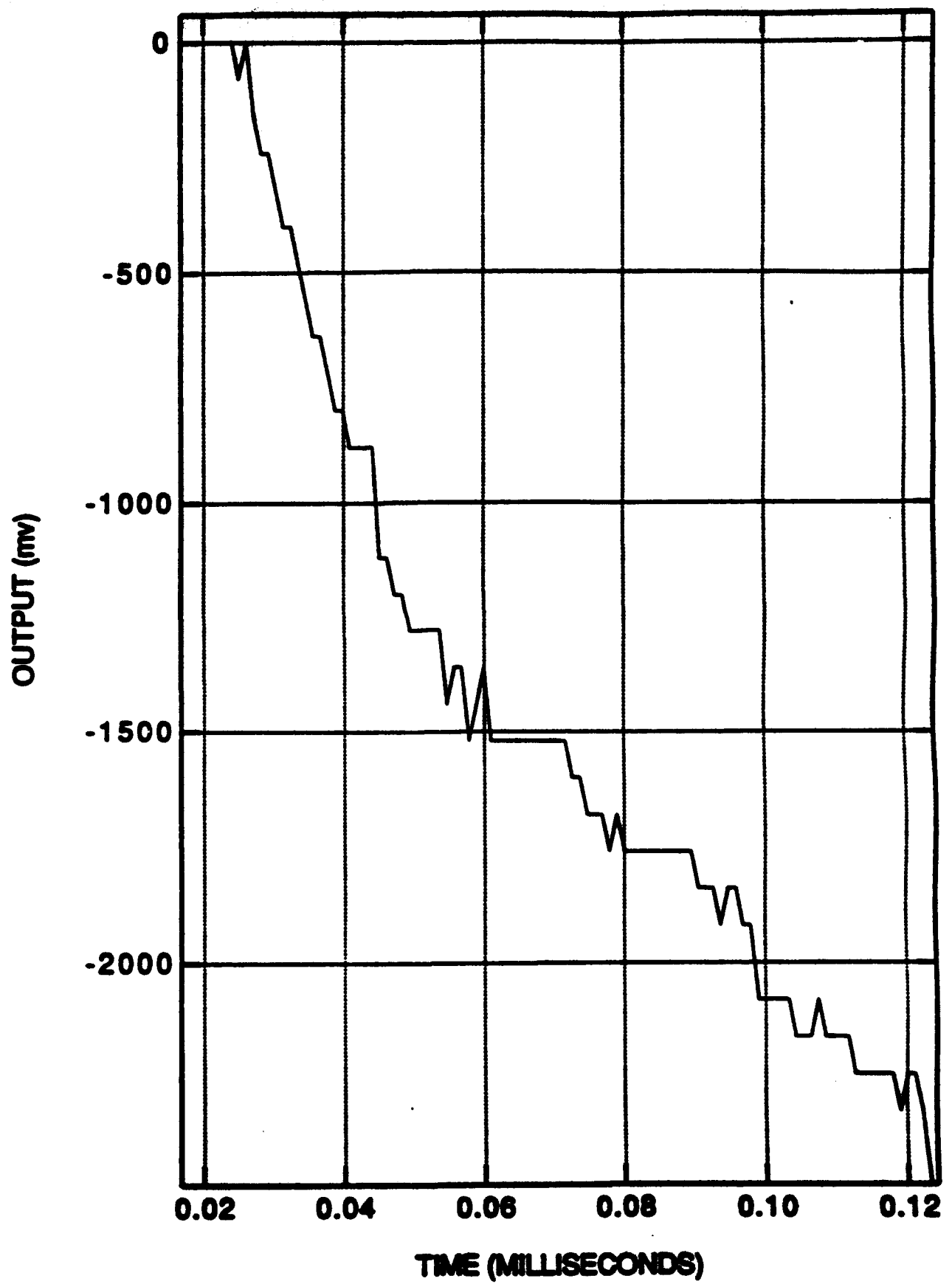
RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT   
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES   
HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE   
VELOCITY: PEAK 6729 FPS  
STABLE ☐ DECAYING ☒ INCREASING ☐  
OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

# GAP TEST 92





GAP TEST  
PROJECT 01-5132-001

TEST NO. 91

DATE 10-20-92

SOIL SAMPLE NO. EP-C1-113

TEMPERATURE 86

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT           

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES           

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE           

VELOCITY: PEAK 6313 FPS

STABLE ☐ DECAYING ☐ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

GAP TEST  
PROJECT 01-5132-001

TEST NO. 93 <sup>SB-01-008</sup>  
SOIL SAMPLE NO. DA10111111 DATE 12/20/92  
TEMPERATURE 86°

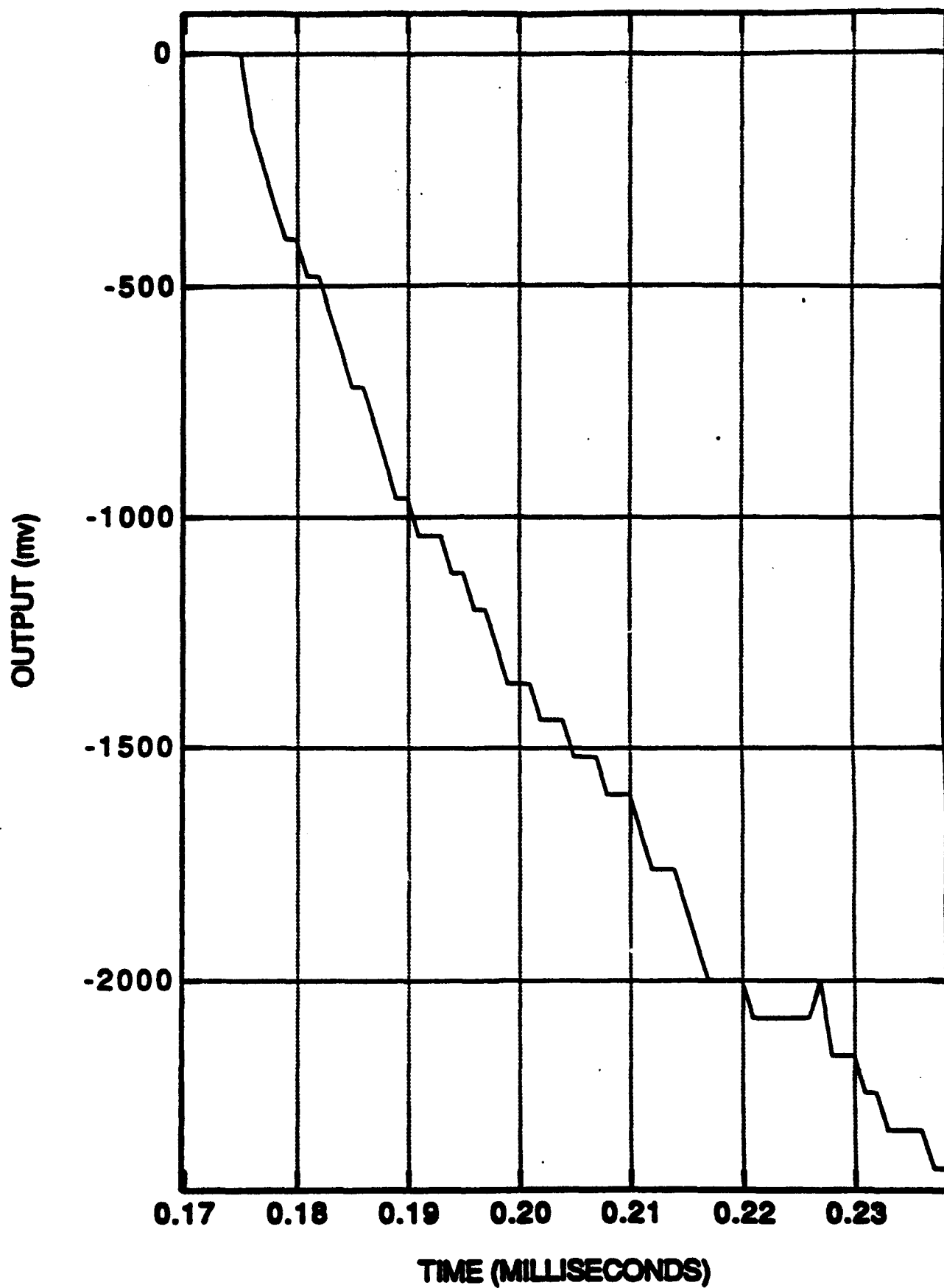
RESULTS

PIPE SPLIT NO ✓ YES        LENGTH OF SPLIT         
PIPE FRAGMENTED NO ✓ YES        NO. OF PIECES         
HOLE PUNCHED IN WITNESS PLATE NO ✓ YES        SIZE         
VELOCITY: PEAK 6629 FPS  
STABLE        DECAYING ✓ INCREASING         
OVERALL RESULT POSITIVE        NEGATIVE ✓

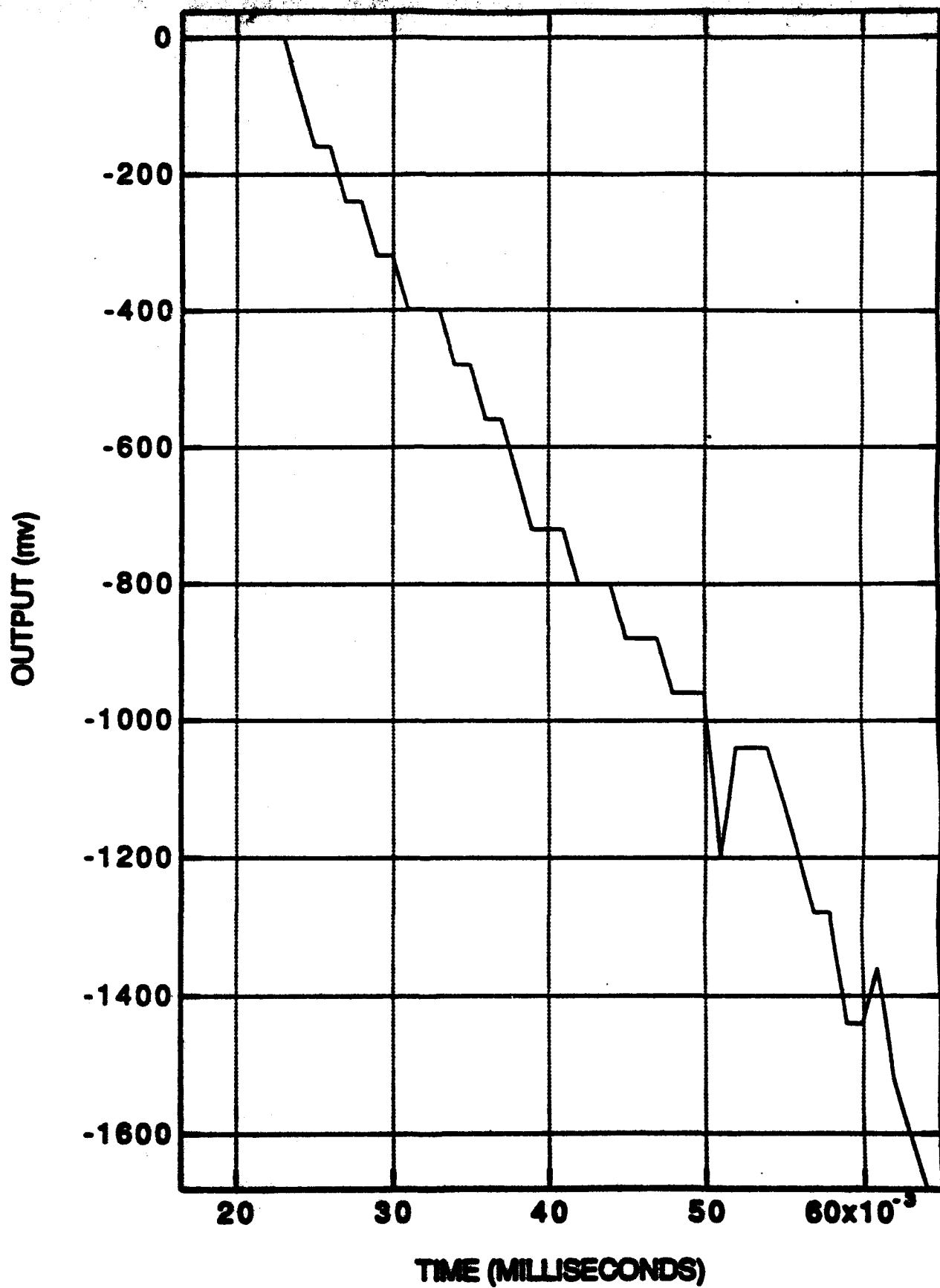
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

# GAP TEST 91



# GAP TEST 93



GAP TEST  
PROJECT 01-5132-001

TEST NO. 92

DATE 10-20-92

SOIL SAMPLE NO. EP-01-113

TEMPERATURE 84°

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE

VELOCITY: PEAK 2794 FPS

STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

GAP TEST  
PROJECT 01-5132-001

TEST NO. 94

DATE 10/21/92

SOIL SAMPLE NO. S6-01-008

TEMPERATURE 76

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT ☐

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES ☐

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE ☐

VELOCITY: PEAK 6764 FPS

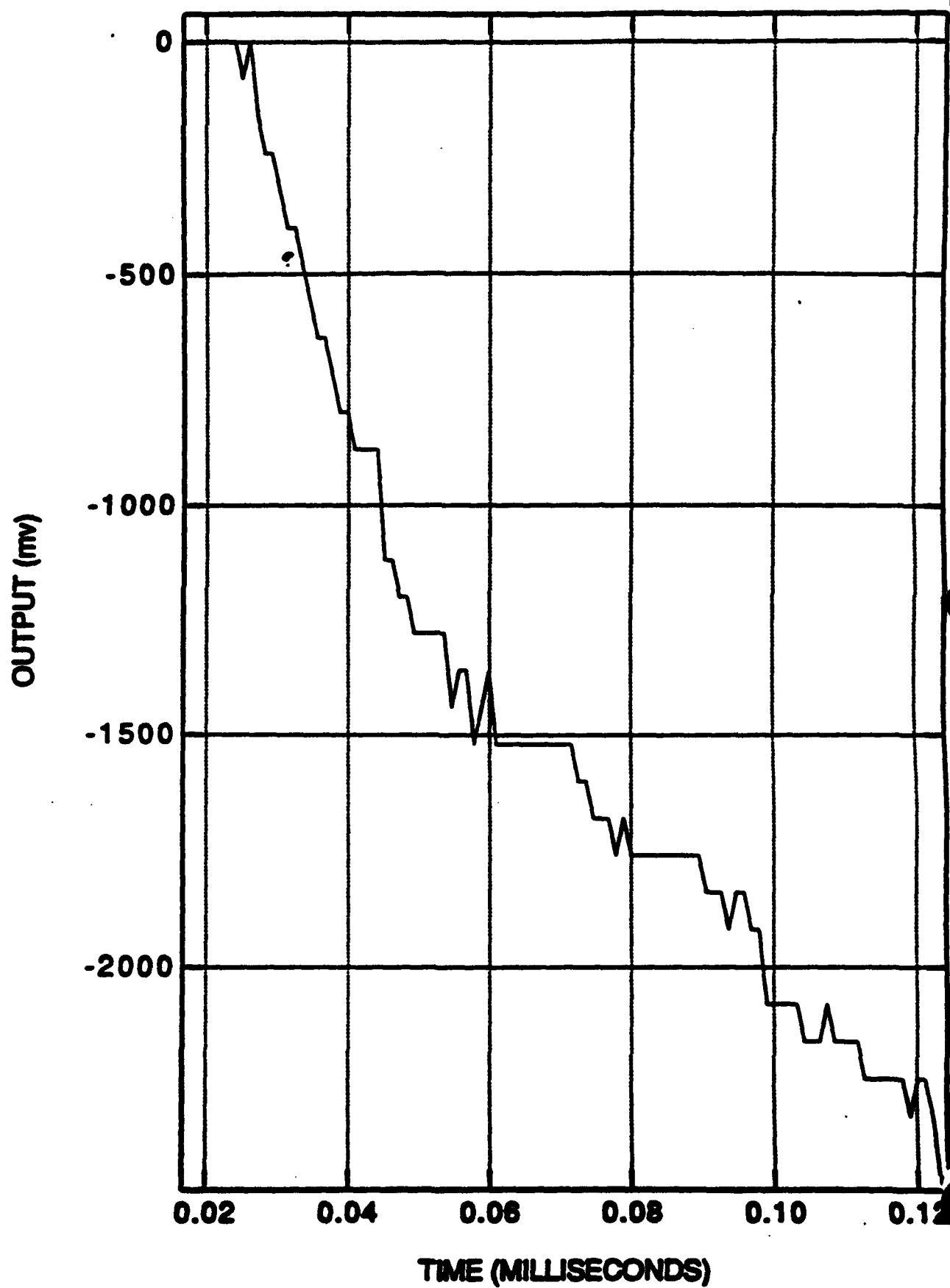
STABLE ☐ DECAYING ☒ INCREASING ☐

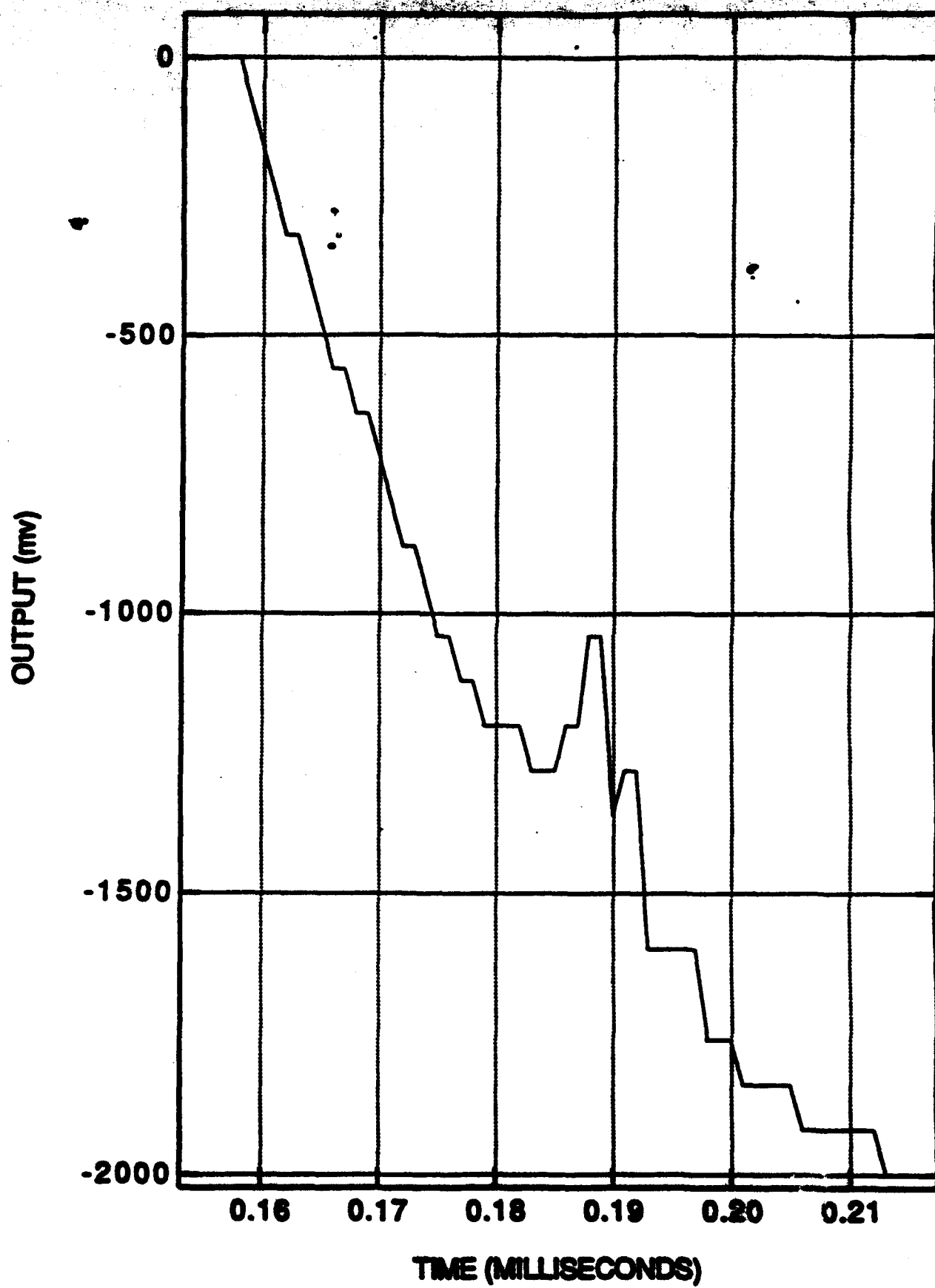
OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL EZ & DE.

ADDITIONAL COMMENTS:

# GAP TEST 92







GAP TEST  
PROJECT 01-5132-001

TEST NO. 93 DATE 12/20/92  
SOIL SAMPLE NO. SB-OT-006 TEMPERATURE 86°

RESULTS

PIPE SPLIT NO ☒ YES \_\_\_\_\_ LENGTH OF SPLIT \_\_\_\_\_  
PIPE FRAGMENTED NO ☒ YES \_\_\_\_\_ NO. OF PIECES \_\_\_\_\_  
HOLE PUNCHED IN WITNESS PLATE NO ☒ YES \_\_\_\_\_ SIZE \_\_\_\_\_  
VELOCITY: PEAK 6629 FPS  
STABLE \_\_\_\_\_ DECAYING ☒ INCREASING \_\_\_\_\_  
OVERALL RESULT POSITIVE \_\_\_\_\_ NEGATIVE ☒  
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

GAP TEST  
PROJECT 01-5132-001

TEST NO. 45 DATE 10/21/92  
SOIL SAMPLE NO. EP-C1-C91-1-2' TEMPERATURE 80°

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE

VELOCITY: PEAK 3024 FPS

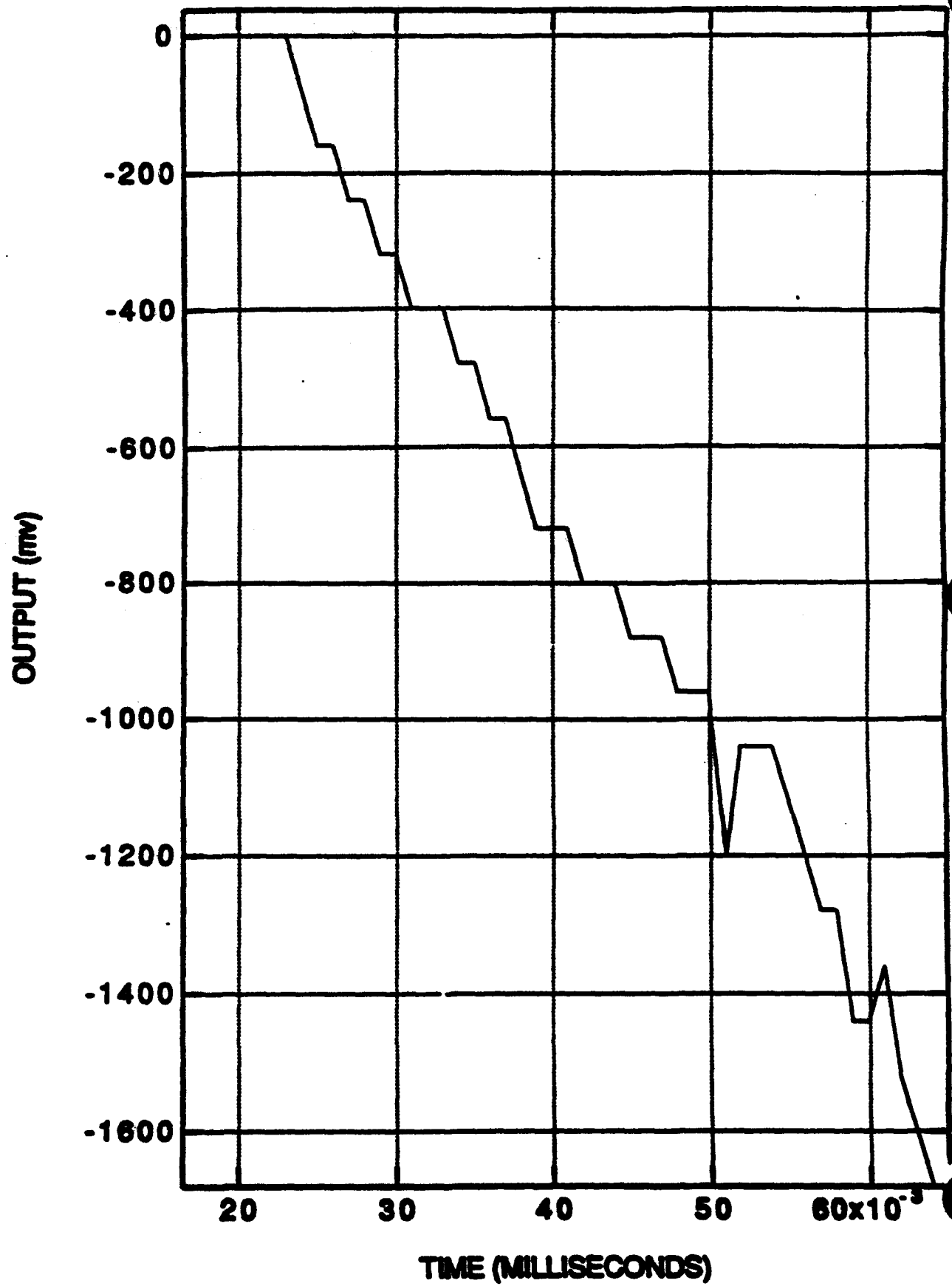
STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

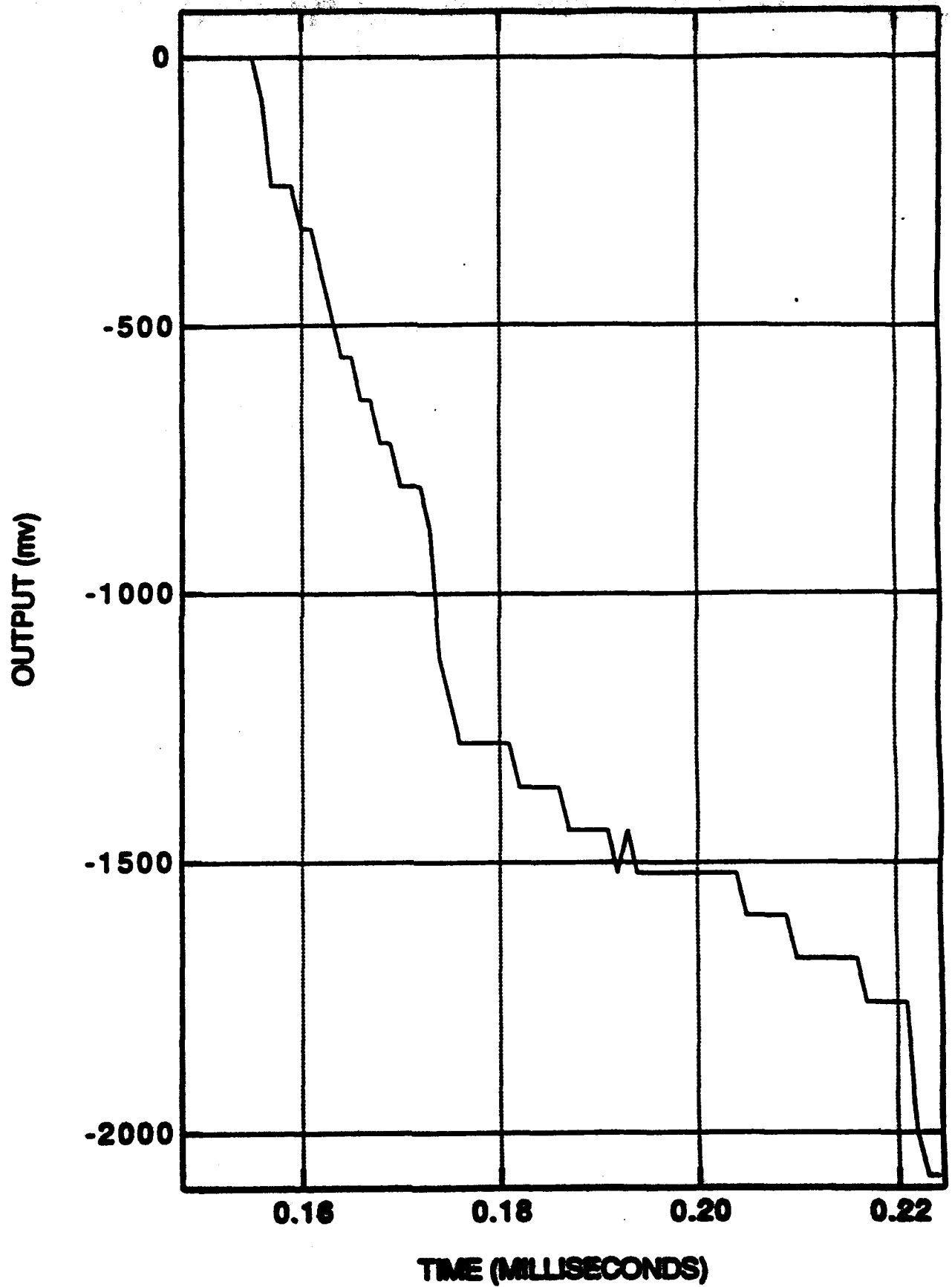
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

# GAP TEST 93



# GAP TEST 95



GAP TEST  
PROJECT 01-5132-001

TEST NO. 94

DATE 10/21/92

SOIL SAMPLE NO. SB-01-005

TEMPERATURE 76

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE

VELOCITY: PEAK 6764 FPS

STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL EZ & JE.

ADDITIONAL COMMENTS:

GAP TEST  
PROJECT 01-5132-001

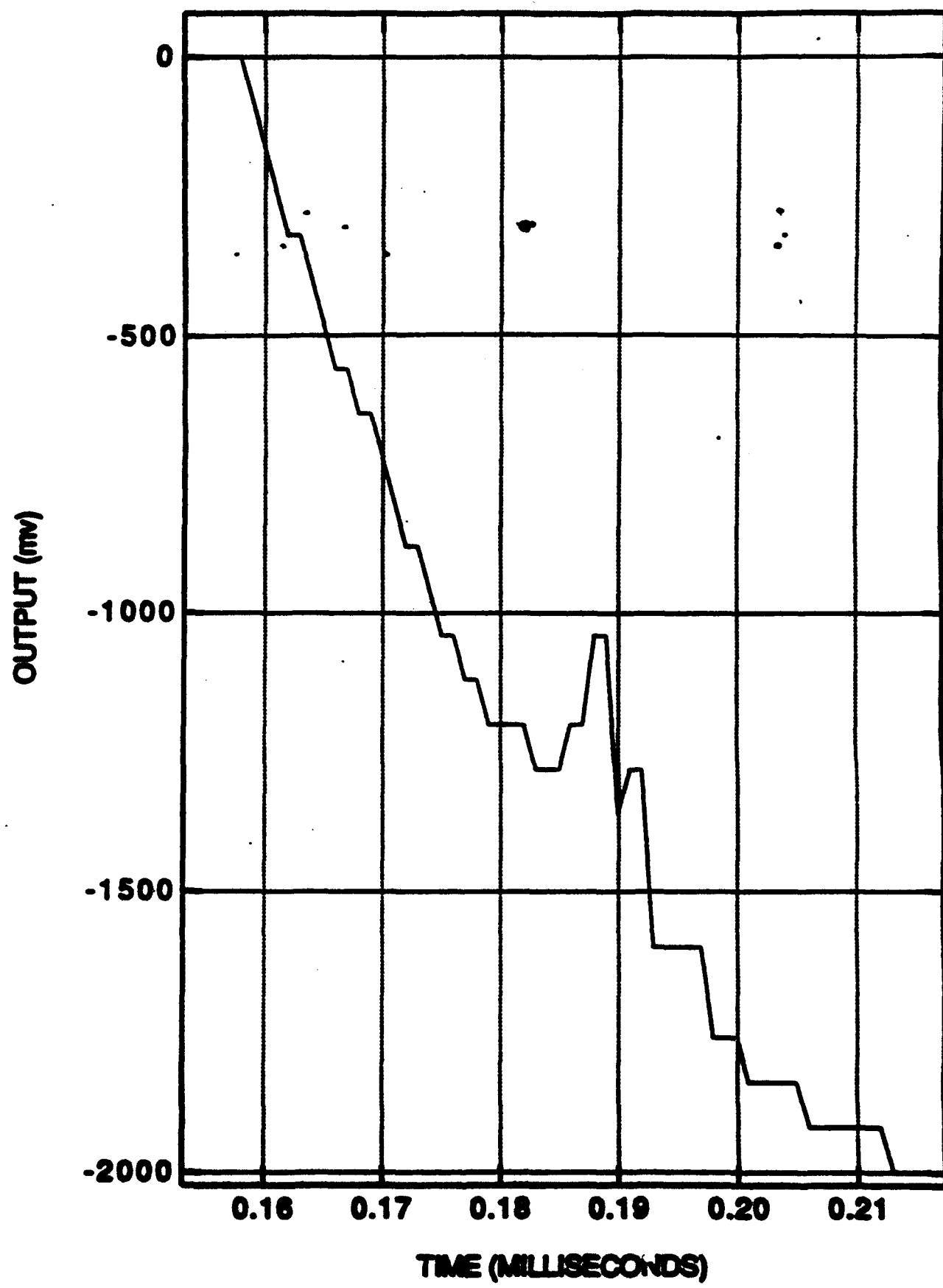
TEST NO. 916 DATE 10/21/92  
SOIL SAMPLE NO. EP-01-091-1-2' TEMPERATURE 84°

RESULTS

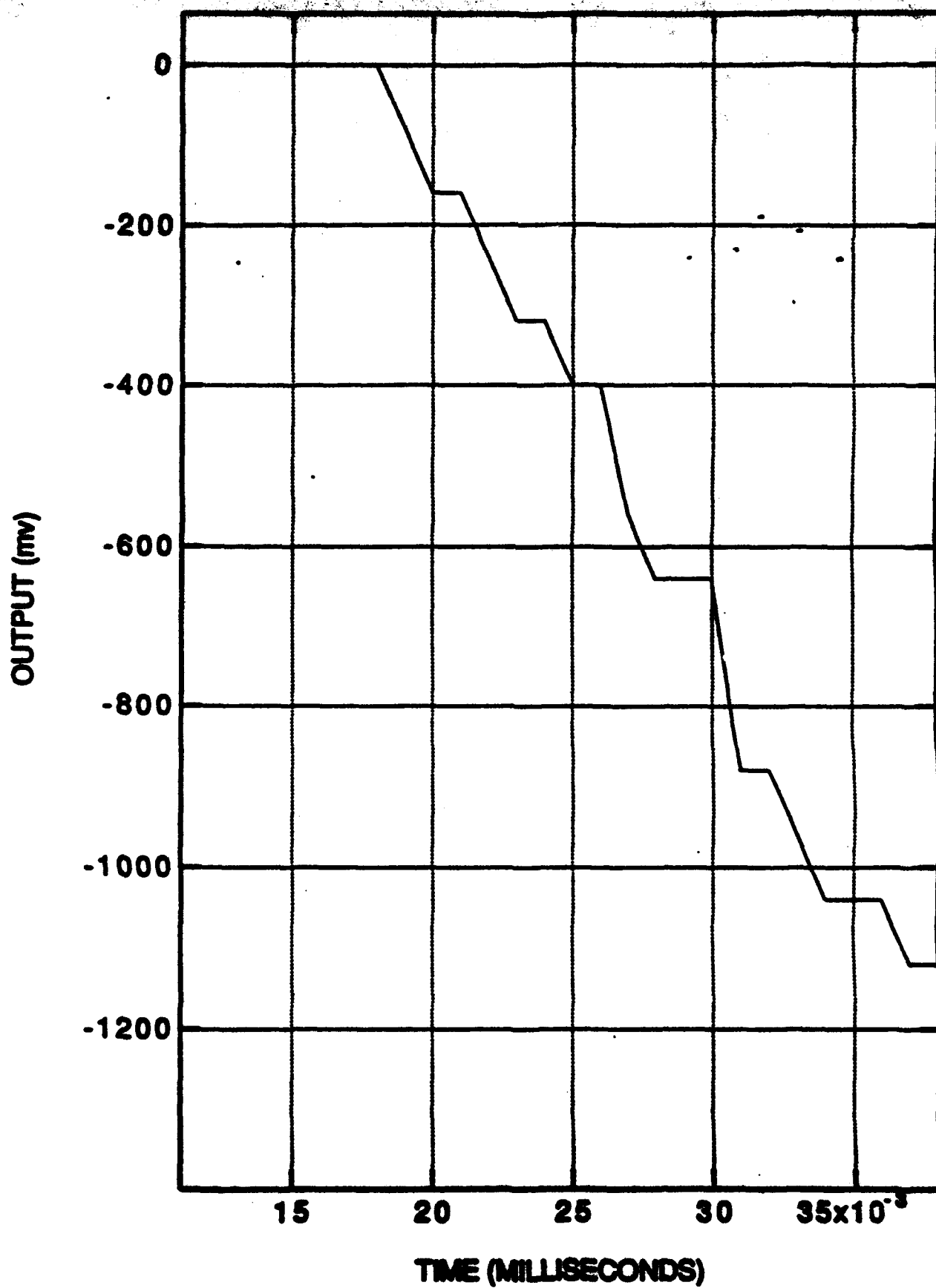
PIPE SPLIT NO ✓ YES        LENGTH OF SPLIT         
PIPE FRAGMENTED NO ✓ YES        NO. OF PIECES         
HOLE PUNCHED IN WITNESS PLATE NO ✓ YES        SIZE         
VELOCITY: PEAK 1690 FPS  
            STABLE        DECAYING ✓ INCREASING         
OVERALL RESULT POSITIVE        NEGATIVE ✓  
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

# GAP TEST 94



# GAP TEST 88





GAP TEST  
PROJECT 01-5132-001

TEST NO. 45 DATE 10/21/92  
SOIL SAMPLE NO. EP-C1-C91-1-2' TEMPERATURE 80°

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT ☐  
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES ☐  
HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE ☐  
VELOCITY: PEAK 3024 FPS  
STABLE ☐ DECAYING ☒ INCREASING ☐  
OVERALL RESULT POSITIVE ☐ NEGATIVE ☒  
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

GAP TEST  
PROJECT 01-5132-001

TEST NO. 97 DATE 10/21/92  
SOIL SAMPLE NO. EP-C1-025 3-35' TEMPERATURE 92°

RESULTS

PIPE SPLIT NO ✓ YES        LENGTH OF SPLIT       

PIPE FRAGMENTED NO ✓ YES        NO. OF PIECES       

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES        SIZE       

VELOCITY: PEAK 2936 FPS

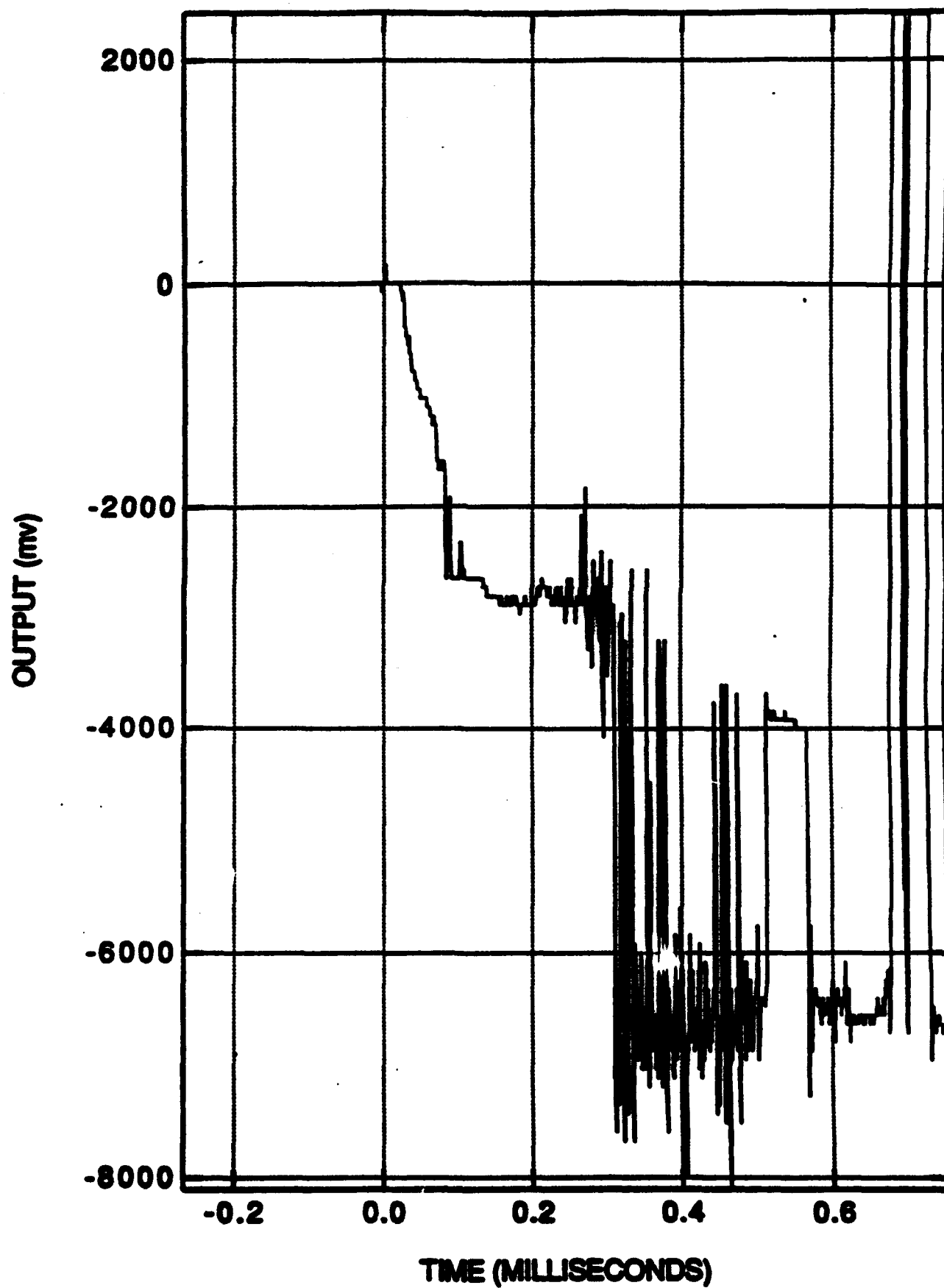
STABLE        DECAYING ✓ INCREASING       

OVERALL RESULT POSITIVE        NEGATIVE ✓

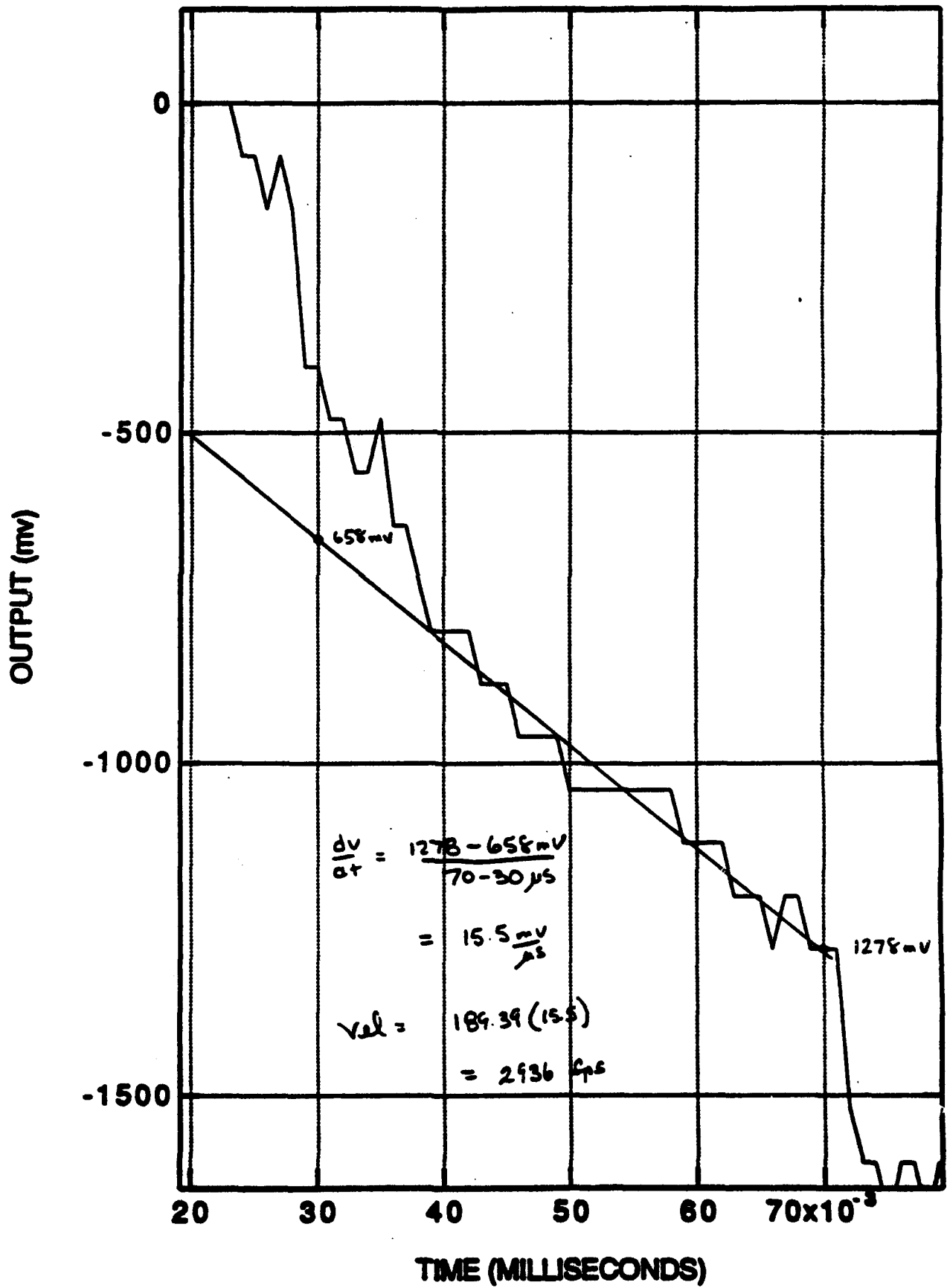
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

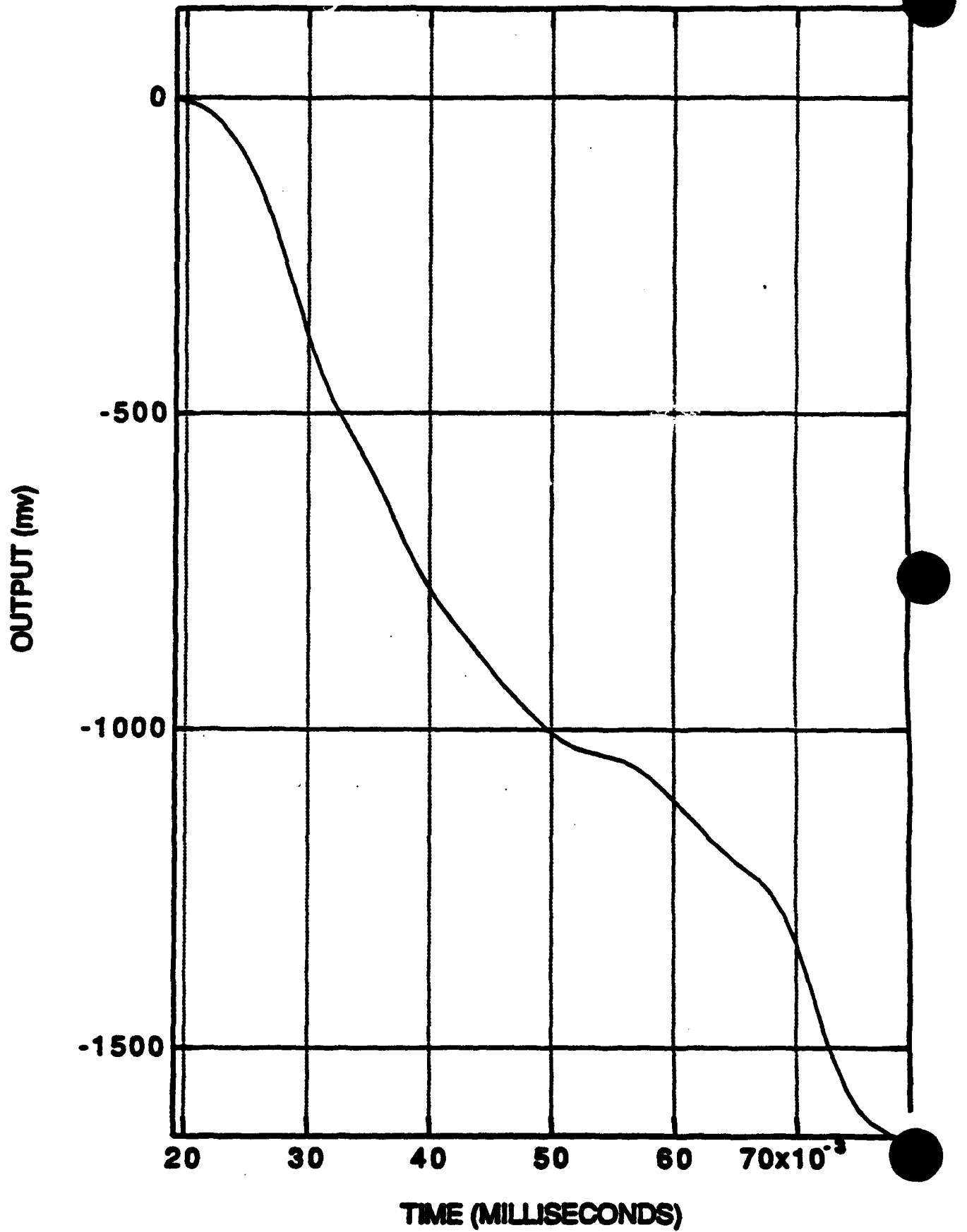
# GAP TEST 97



# GAP TEST 97



# GAP TEST 97



GAP TEST  
PROJECT 01-5132-001

TEST NO. 95 DATE 10/21/92  
SOIL SAMPLE NO. EP-01-G25 3-2.5' TEMPERATURE 93°

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT       

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES       

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE       

VELOCITY: PEAK 5492 FPS

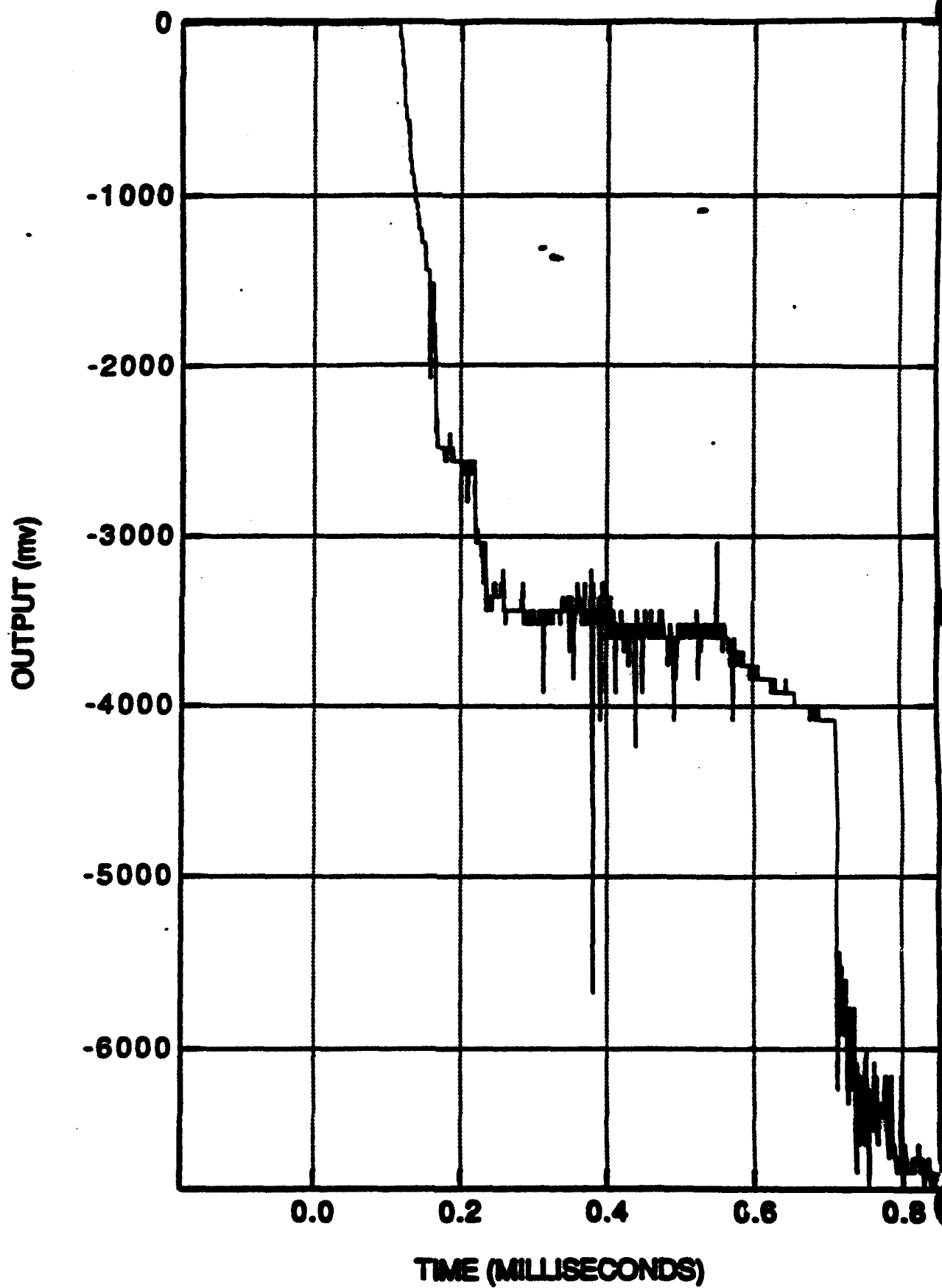
STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

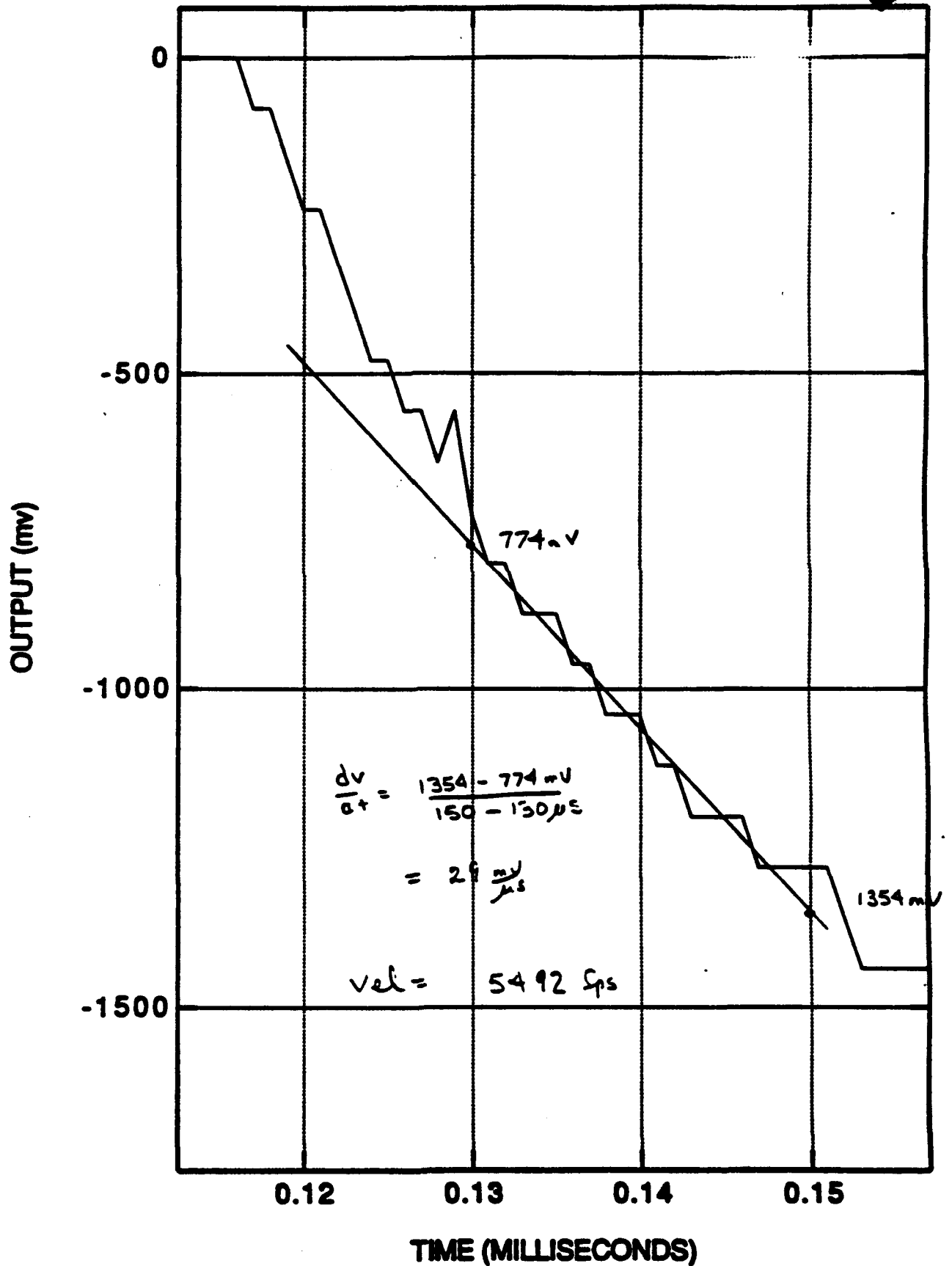
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

# GAP TEST 98

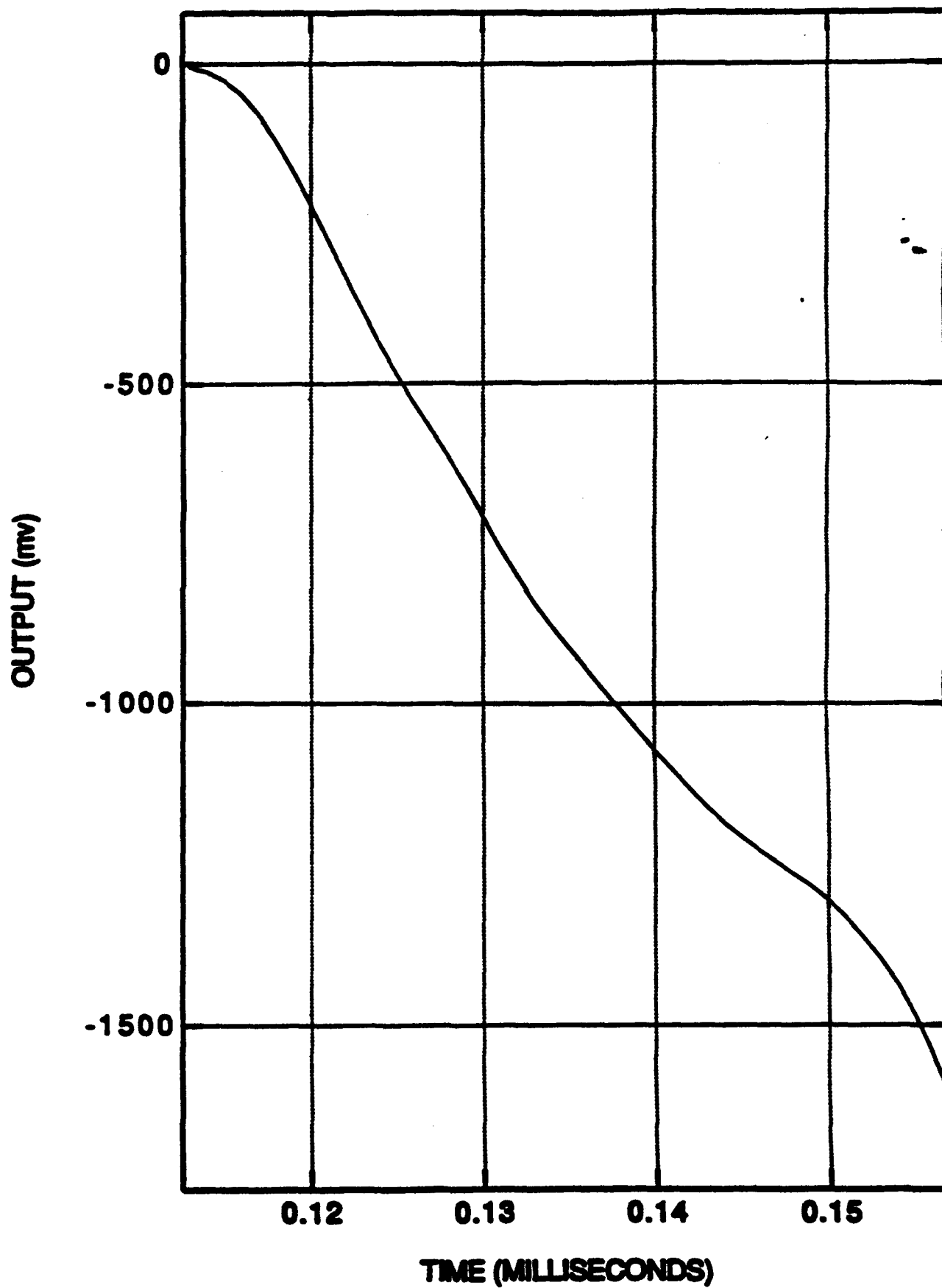


# GAP TEST 98





# GAP TEST 98



GAP TEST  
PROJECT 01-5132-001

TEST NO. 99 DATE 10/21/92  
SOIL SAMPLE NO. EP-01-062 D-0.5' TEMPERATURE 72°

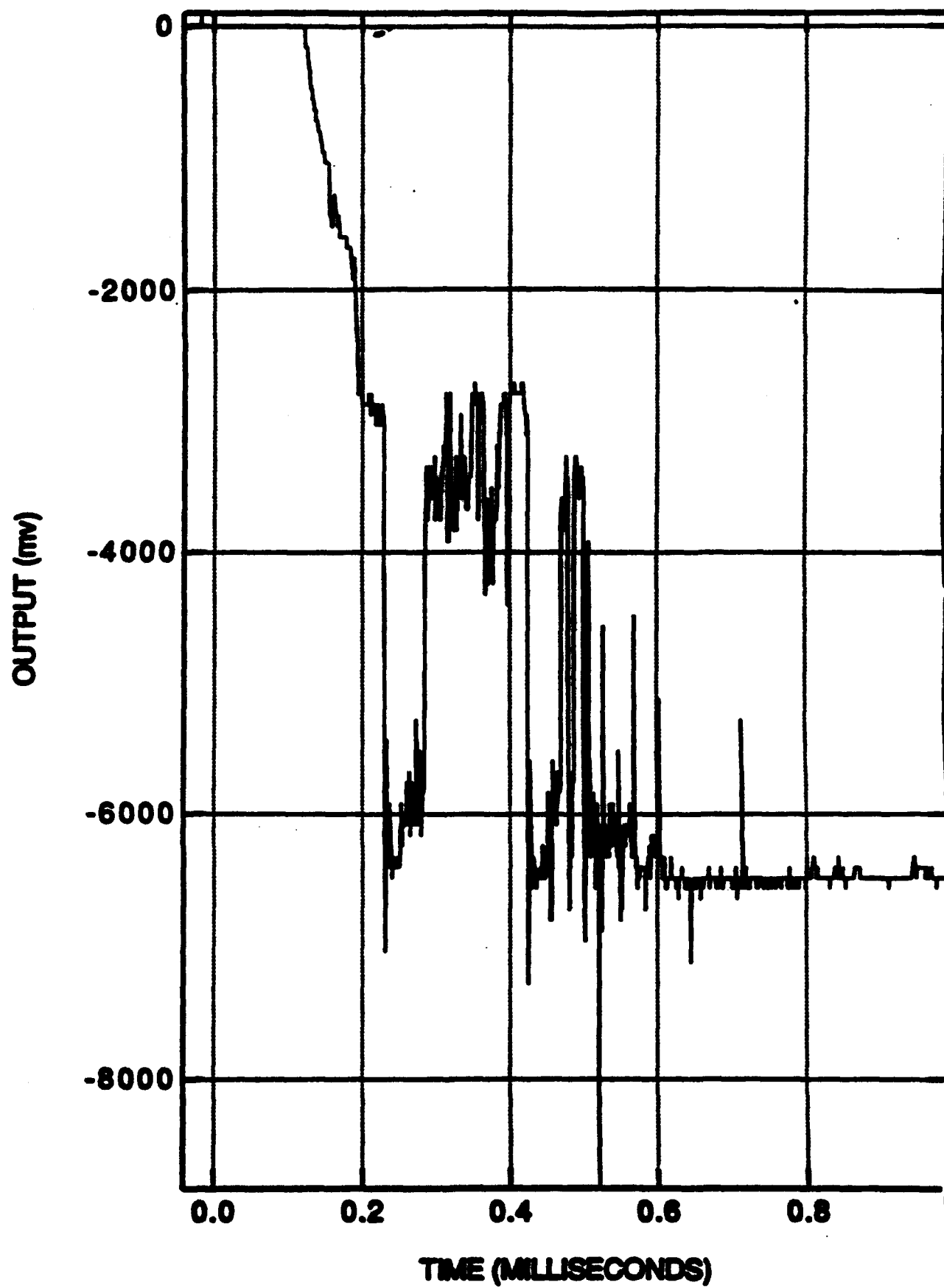
RESULTS

PIPE SPLIT NO. ☒ YES ☐ LENGTH OF SPLIT ☐  
PIPE FRAGMENTED NO. ☒ YES ☐ NO. OF PIECES ☐  
HOLE PUNCHED IN WITNESS PLATE NO. ☒ YES ☐ SIZE ☐  
VELOCITY: PEAK 5632 FPS  
STABLE ☐ DECAYING ☒ INCREASING ☐  
OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

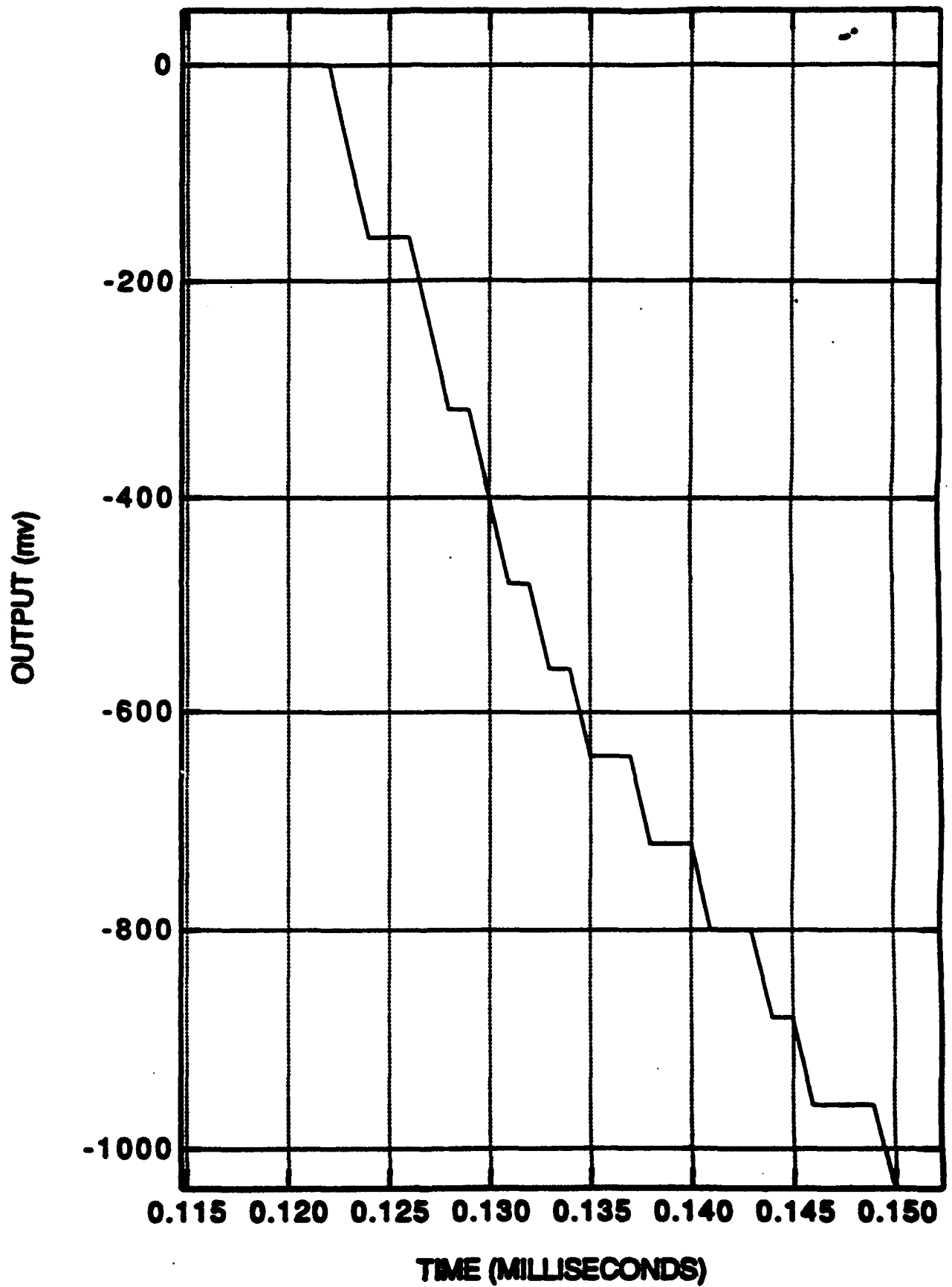
TEST PERSONNEL EZ & SE

ADDITIONAL COMMENTS:

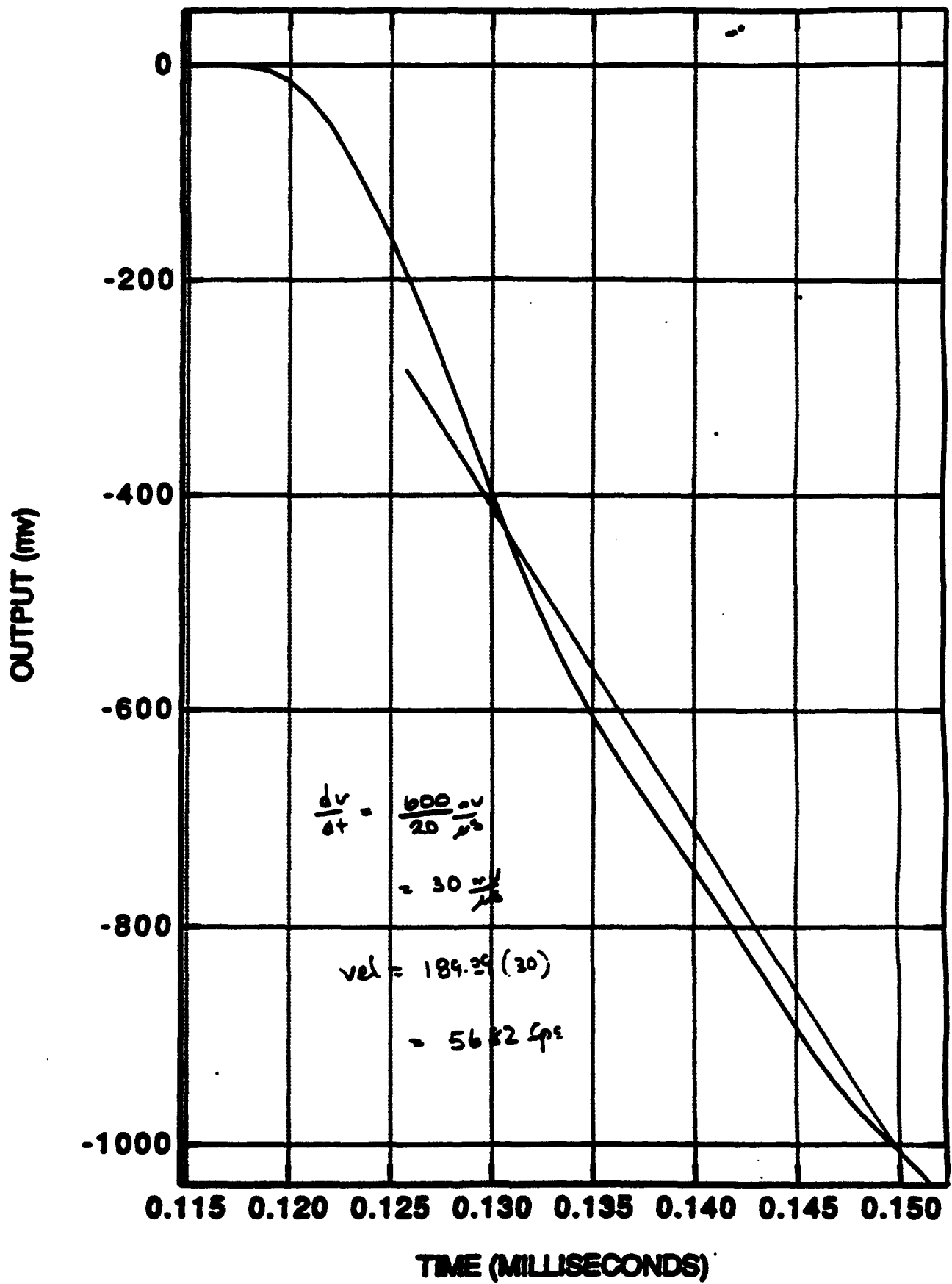
# GAP TEST 99



# GAP TEST 99



# GAP TEST 99



GAP TEST  
PROJECT 01-5132-001

TEST NO. 100 DATE 10/21/92  
SOIL SAMPLE NO. EP-01-002-0-05' TEMPERATURE 90°

RESULTS

PIPE SPLIT NO ✓ YES        LENGTH OF SPLIT       

PIPE FRAGMENTED NO ✓ YES        NO. OF PIECES       

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES        SIZE       

VELOCITY: PEAK 2481 FPS

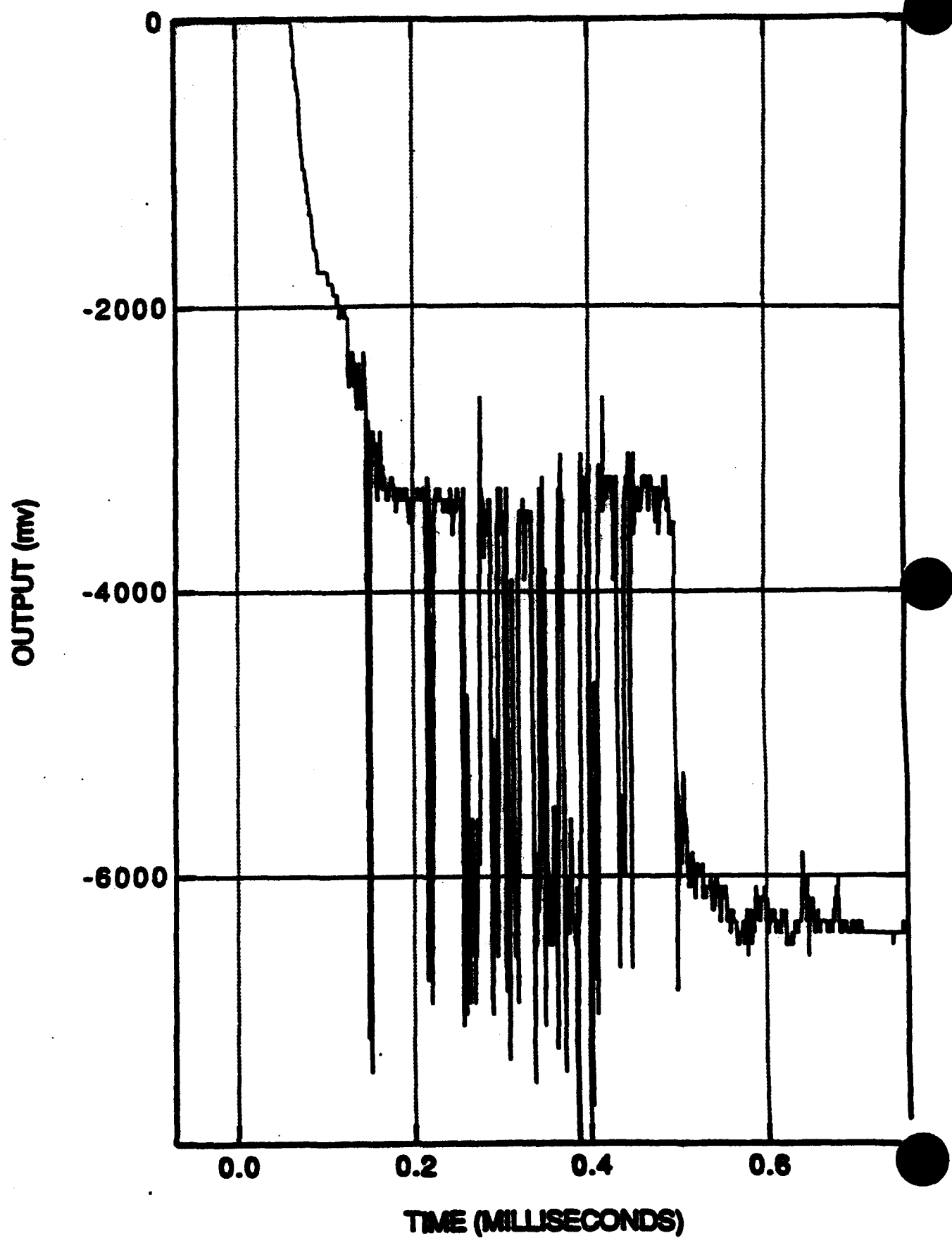
STABLE        DECAYING ✓ INCREASING       

OVERALL RESULT POSITIVE        NEGATIVE ✓

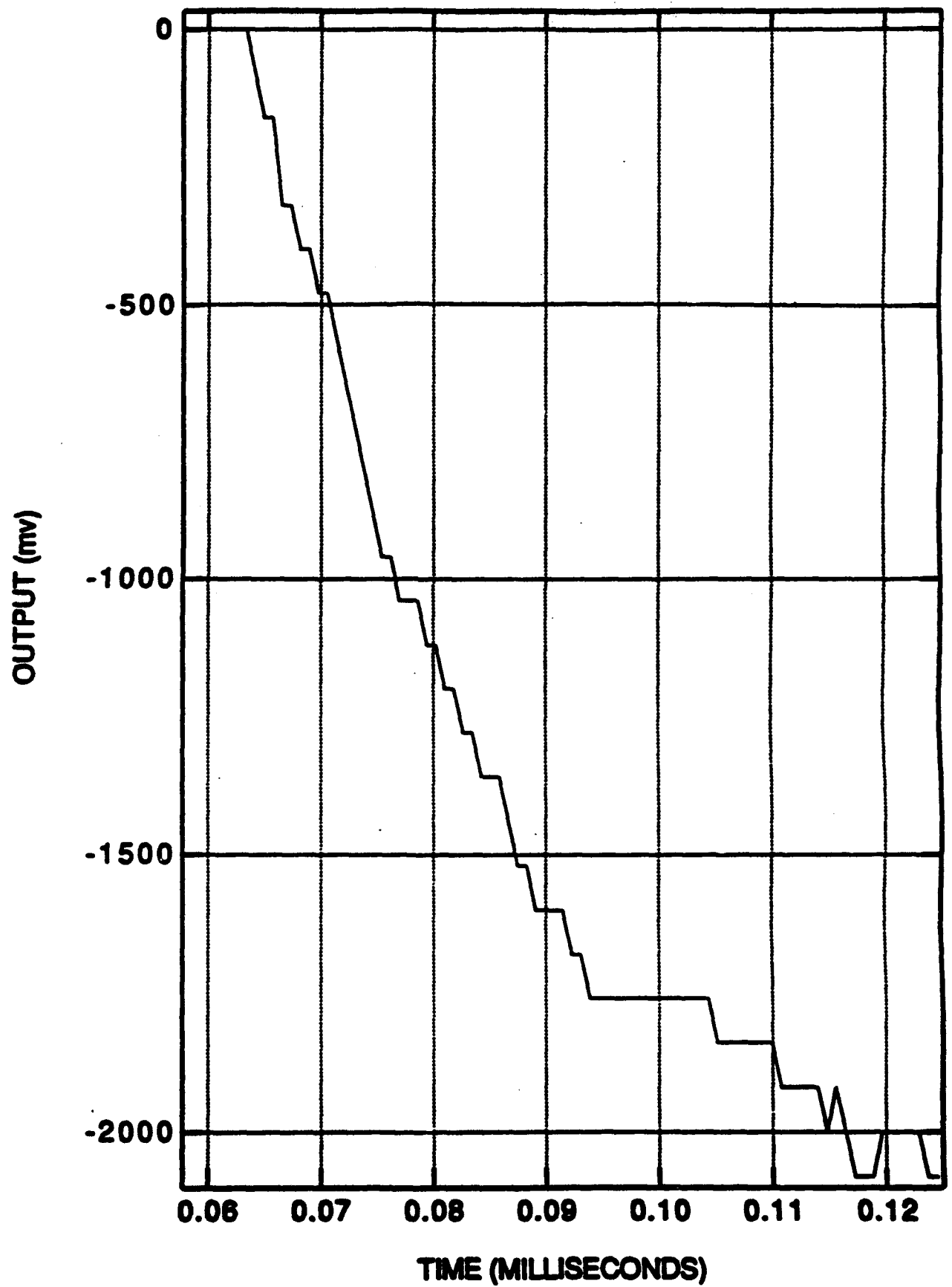
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

# GAP TEST 100

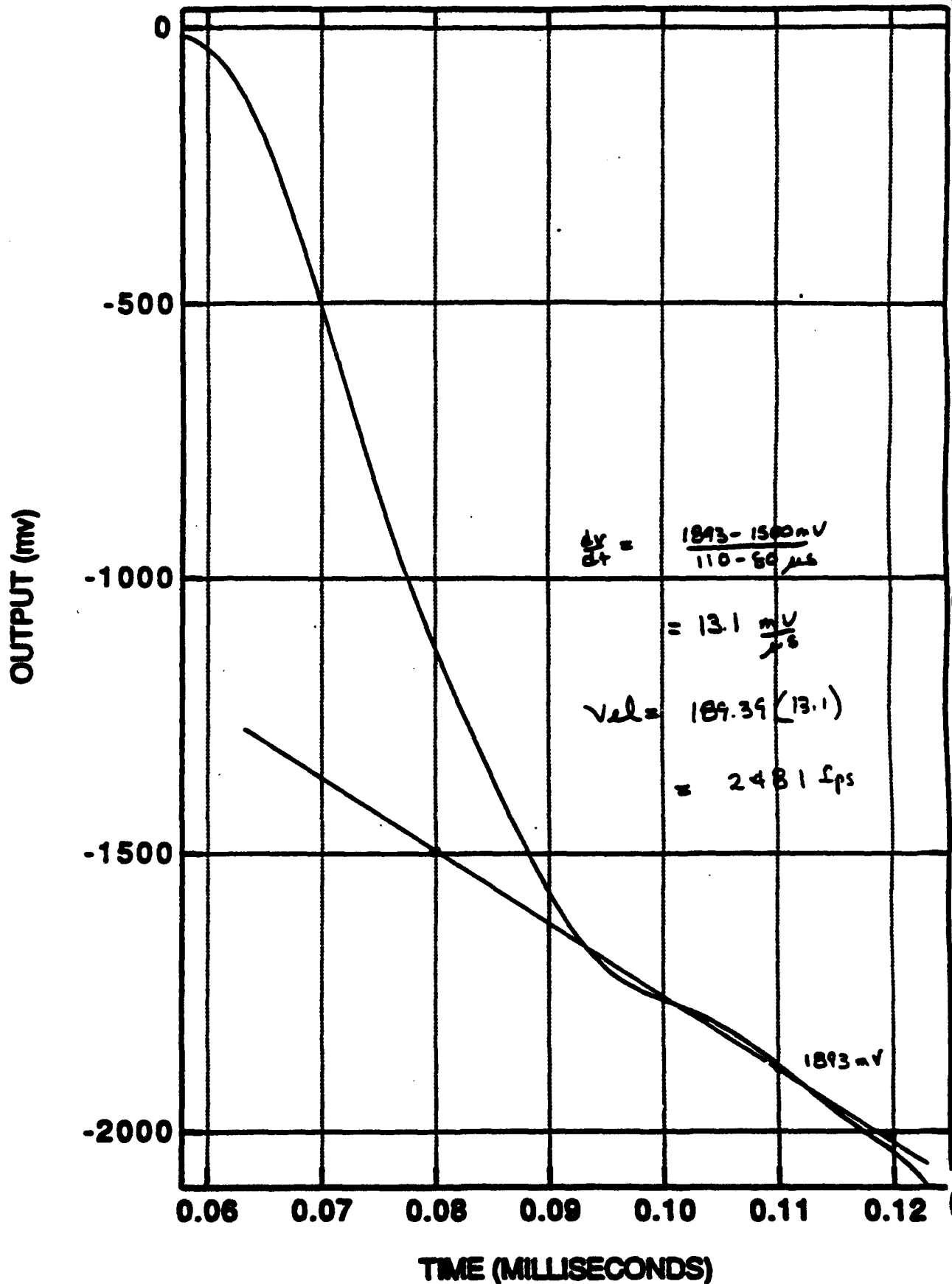


# GAP TEST 100





# GAP TEST 100



GAP TEST  
PROJECT 01-5132-001

TEST NO. 101 DATE 10/21/92  
SOIL SAMPLE NO. EP-C1-C45 3.5-4' TEMPERATURE 90°

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT ☐

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES ☐

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE ☐

VELOCITY: PEAK 5934 FPS

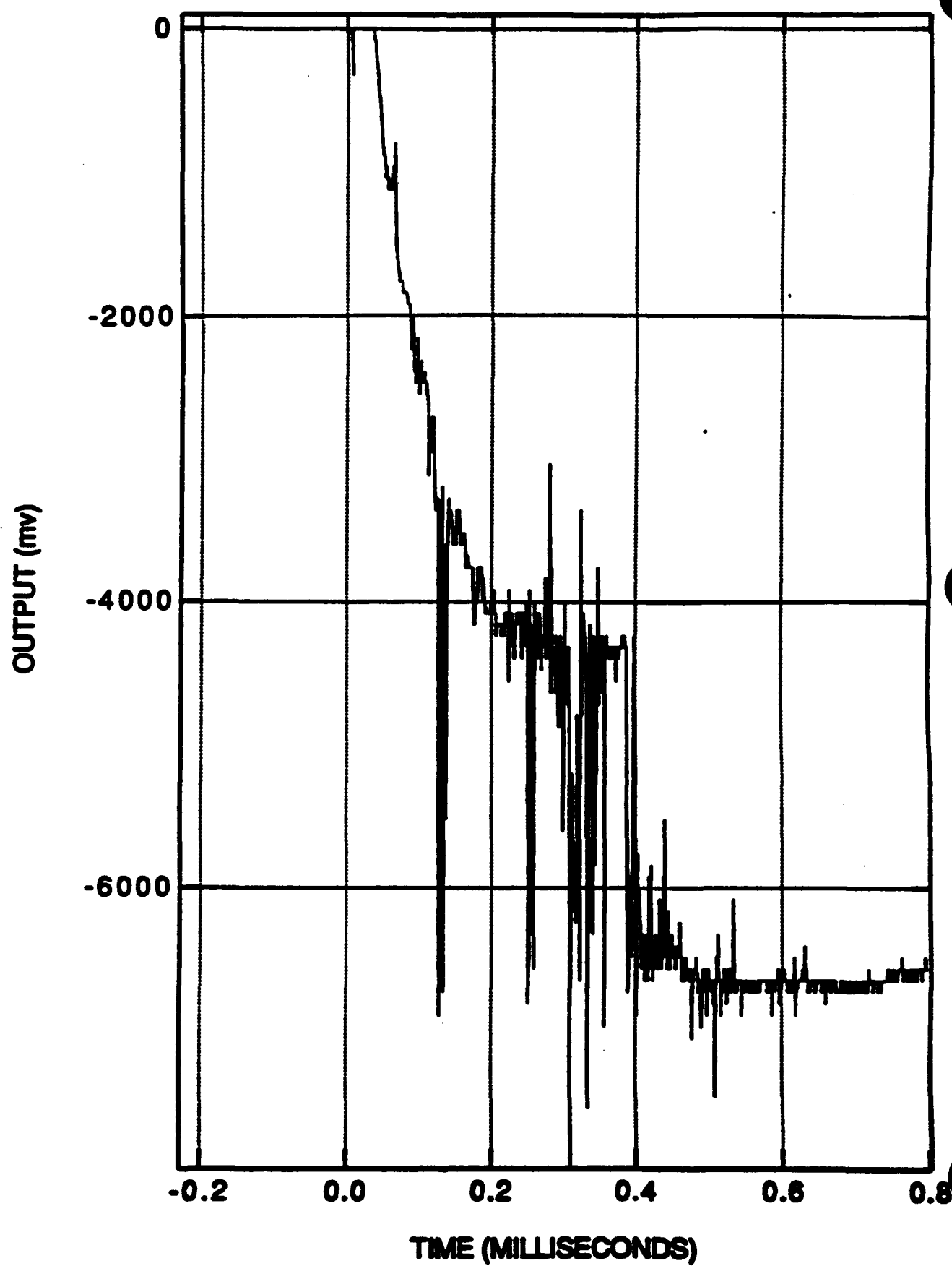
STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

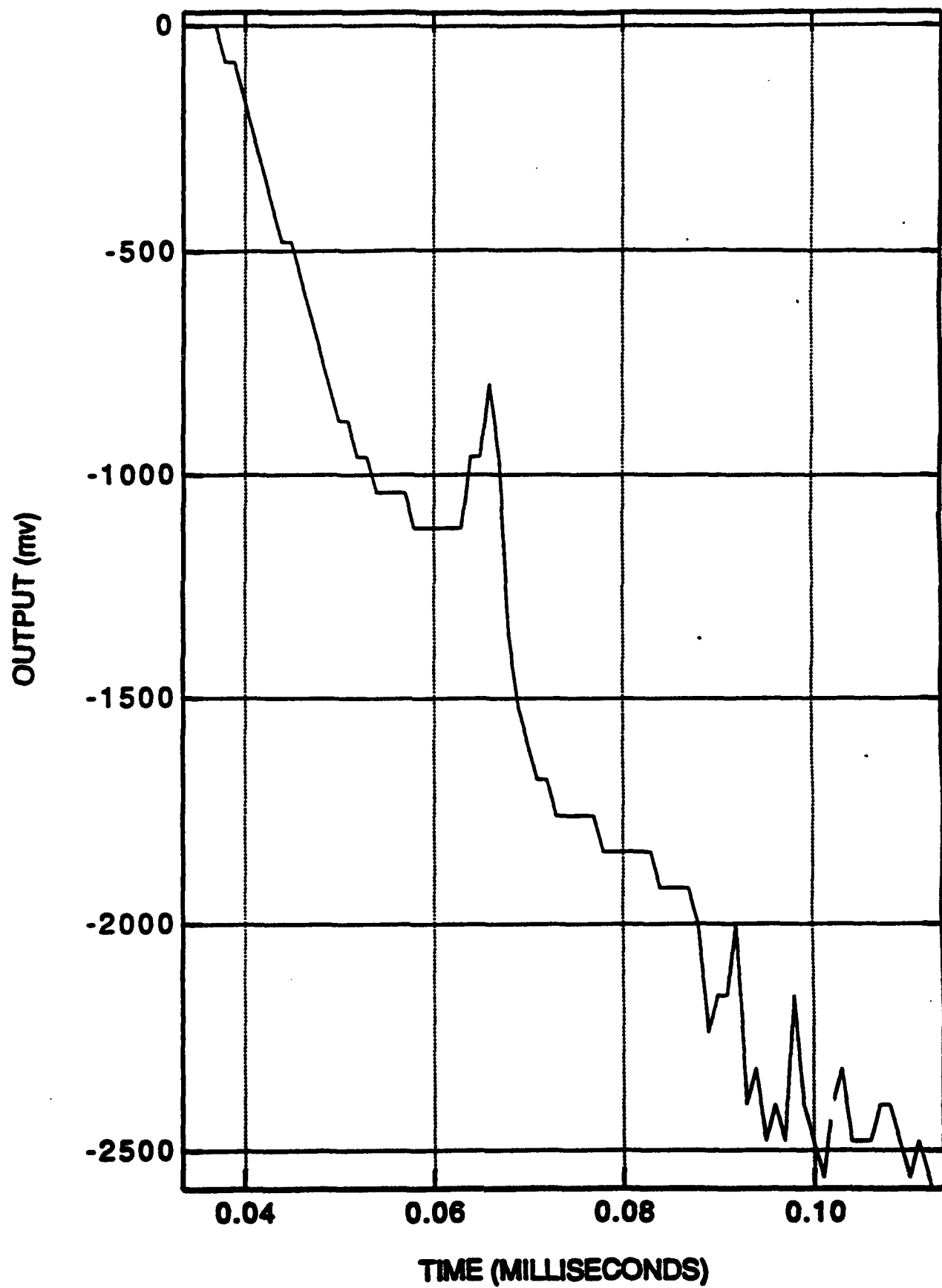
TEST PERSONNEL ER & JE

ADDITIONAL COMMENTS:

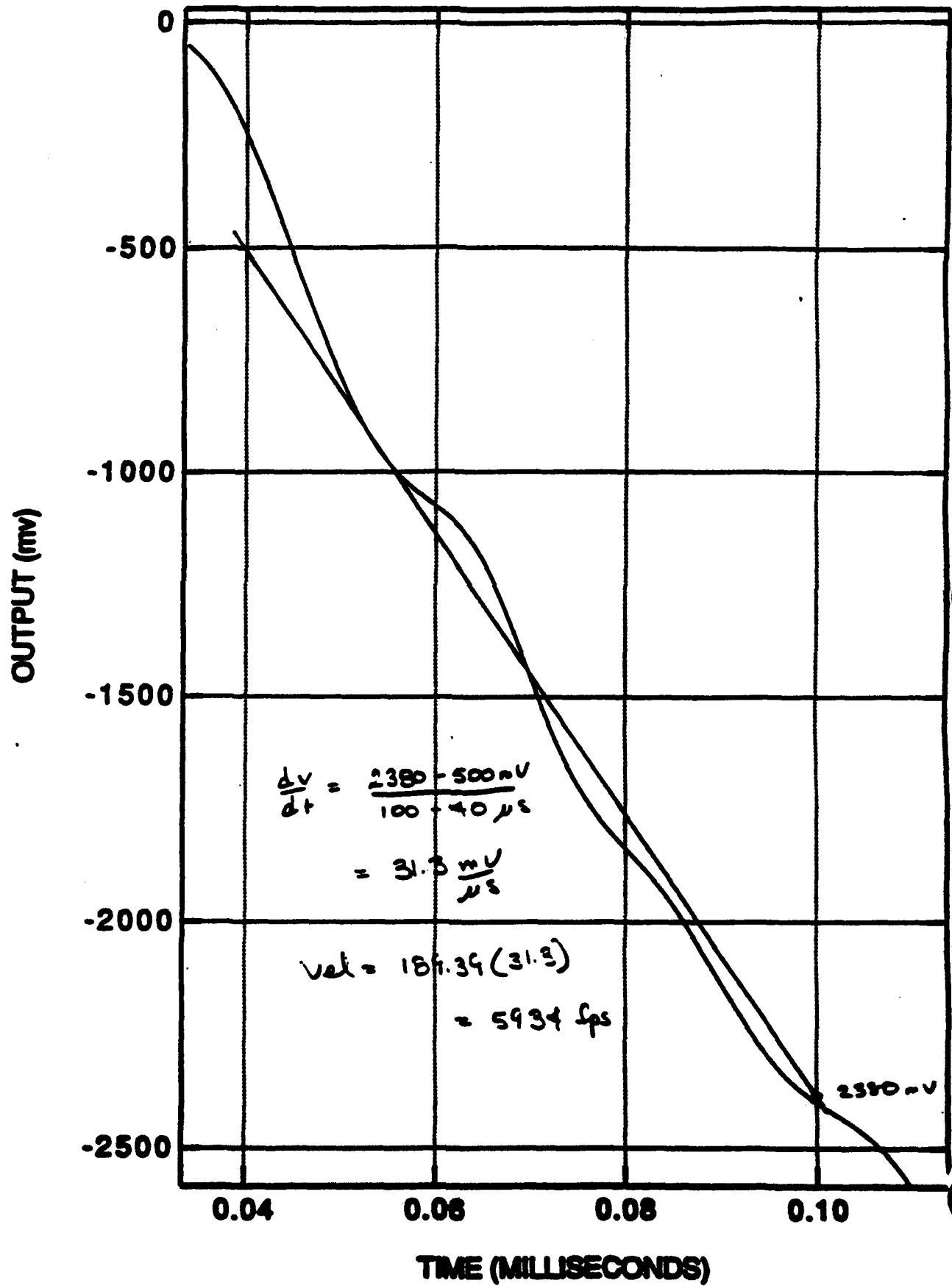
# GAP TEST 101



# GAP TEST 101



# GAP TEST 101



GAP TEST  
PROJECT 01-5132-001

TEST NO. 102 DATE 10/22/92  
SOIL SAMPLE NO. EP-01-045 3.5-4' TEMPERATURE 70°

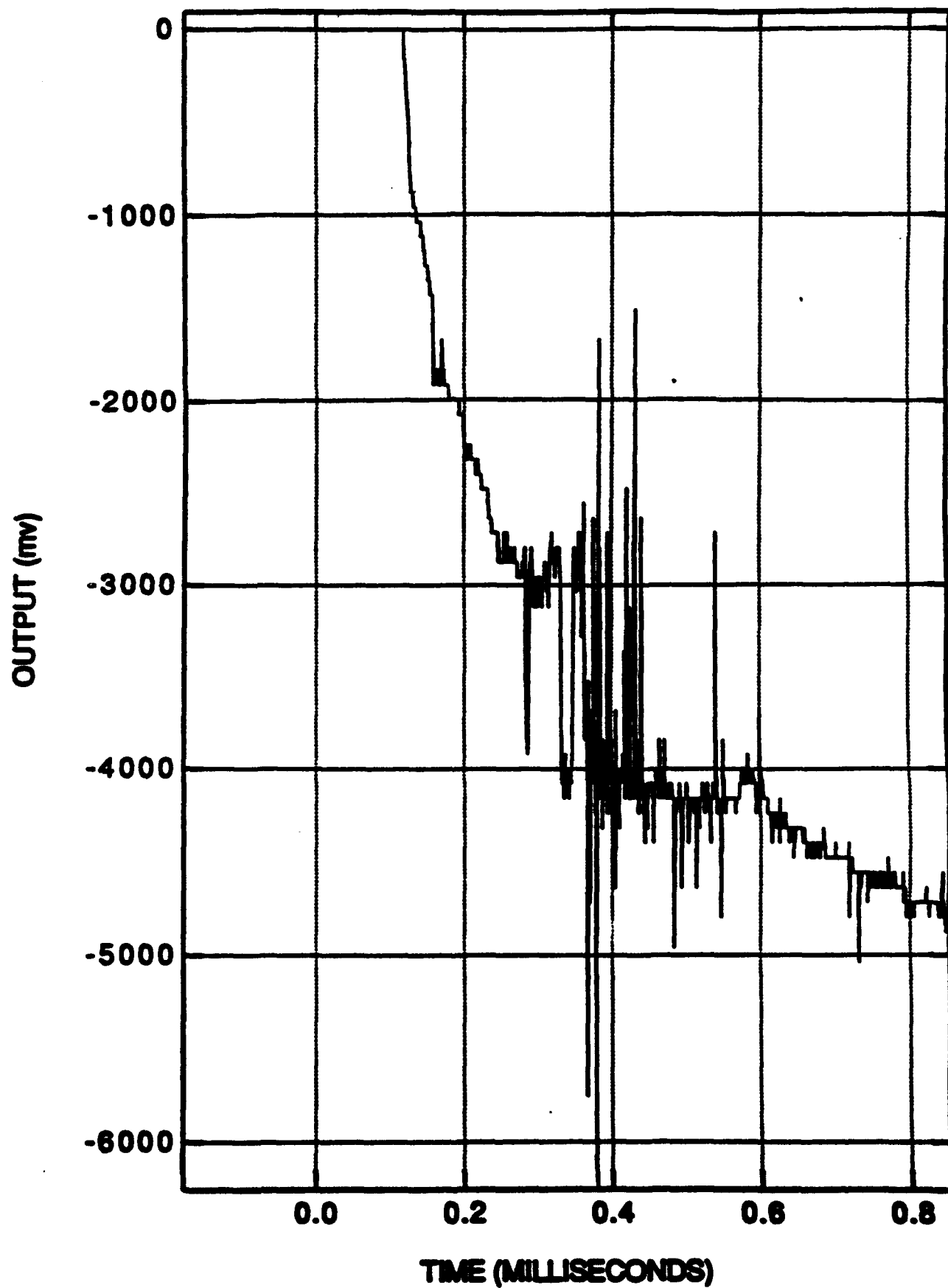
RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT ☐  
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES ☐  
HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE ☐  
VELOCITY: PEAK 3996 FPS  
STABLE ☐ DECAYING ☒ INCREASING ☐  
OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

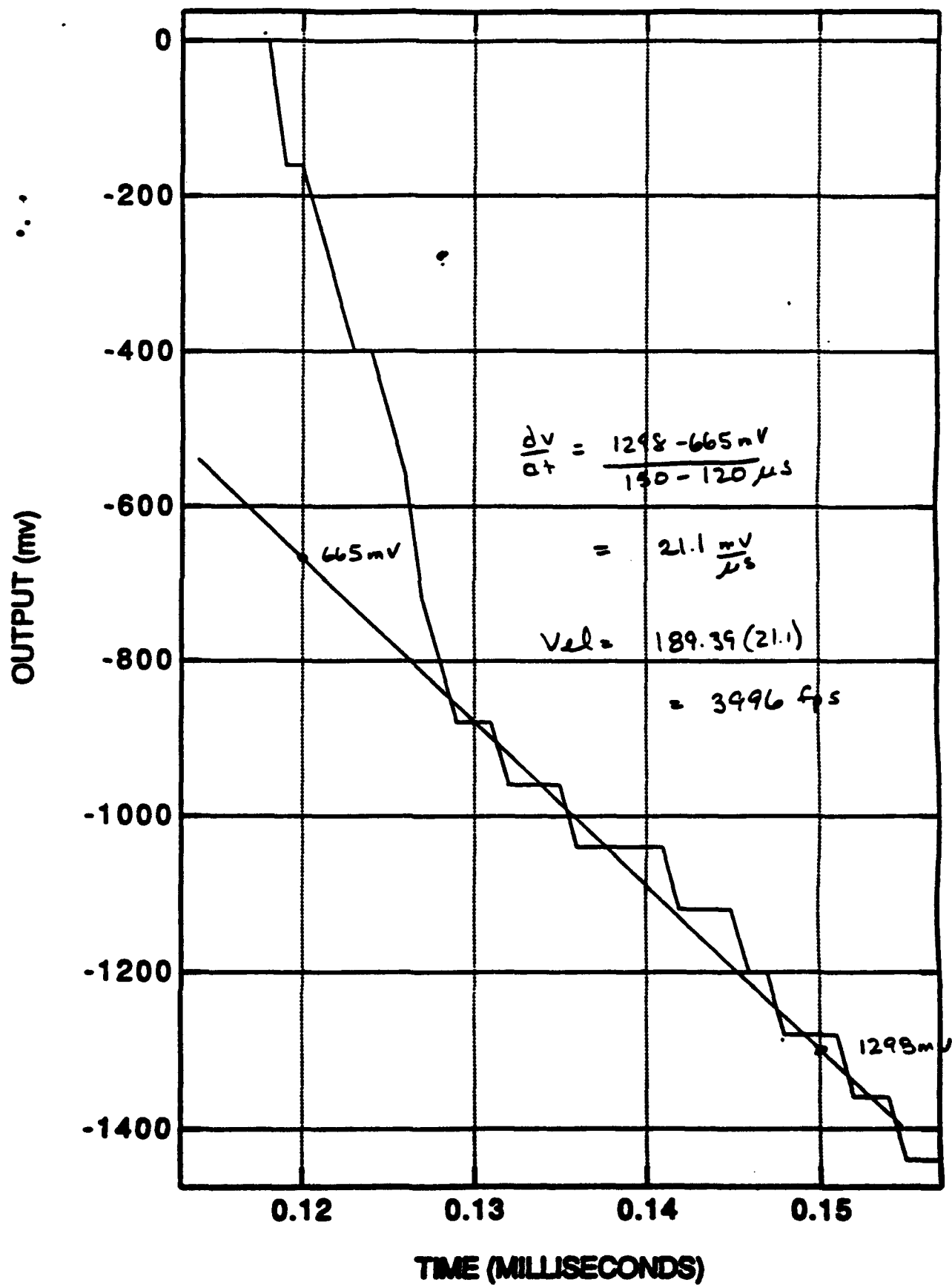
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

# GAP TEST 102

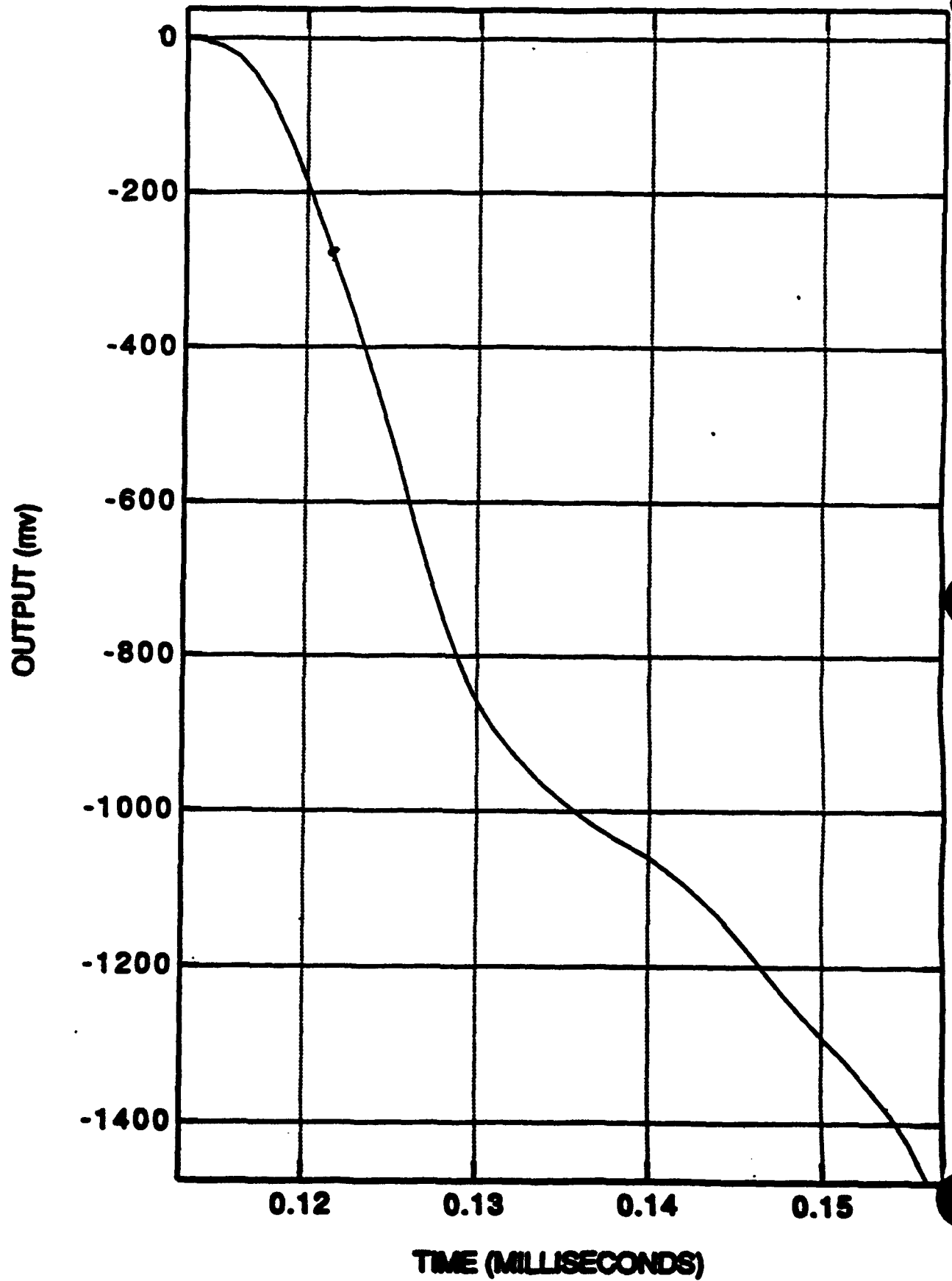


# GAP TEST 102





# GAP TEST 102



GAP TEST  
PROJECT 01-5132-001

TEST NO. 103

DATE 10/22/92

SOIL SAMPLE NO. EP-01-034 4.5-5'

TEMPERATURE 72°

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE

VELOCITY: PEAK 3532 FPS

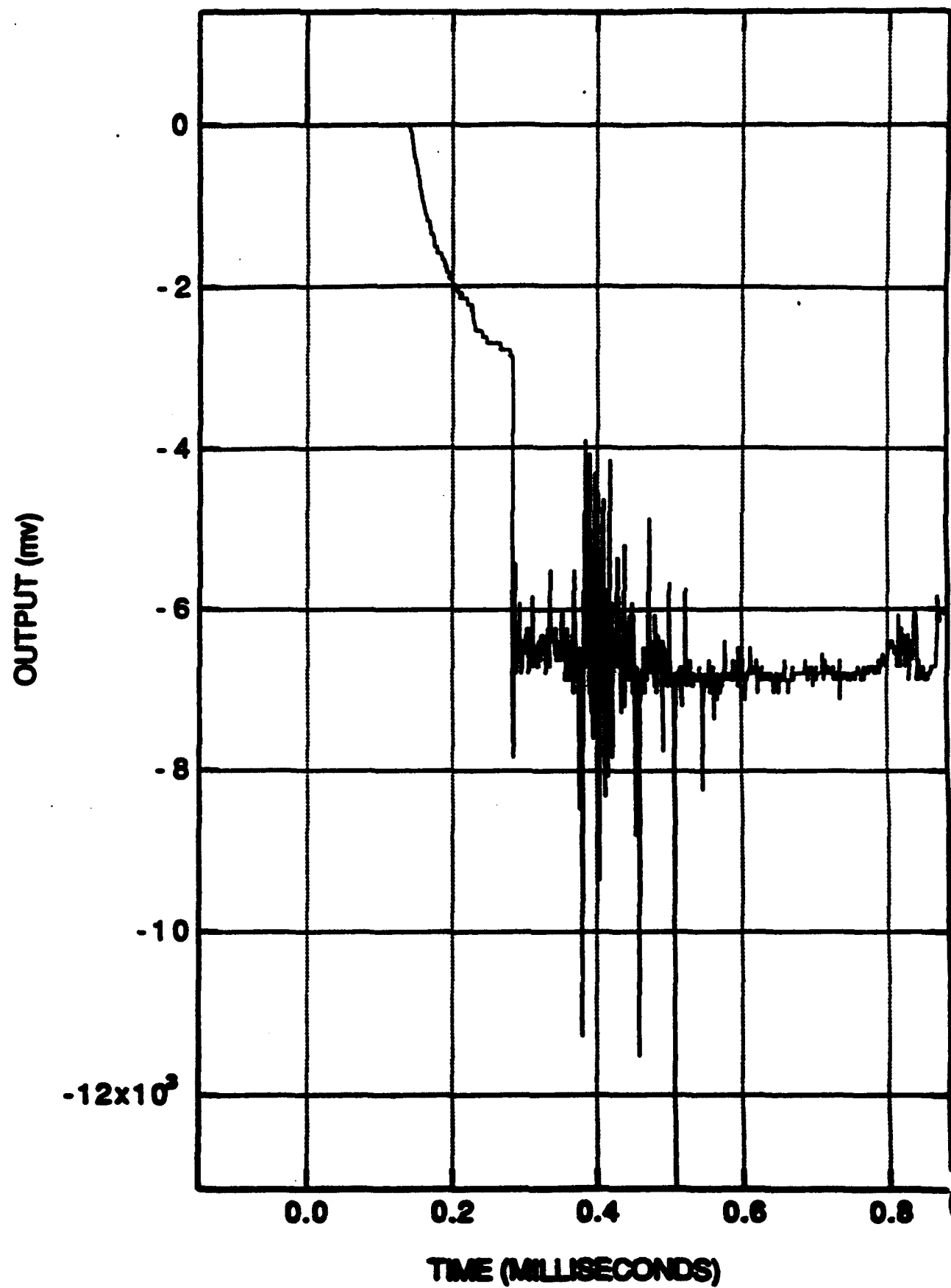
STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

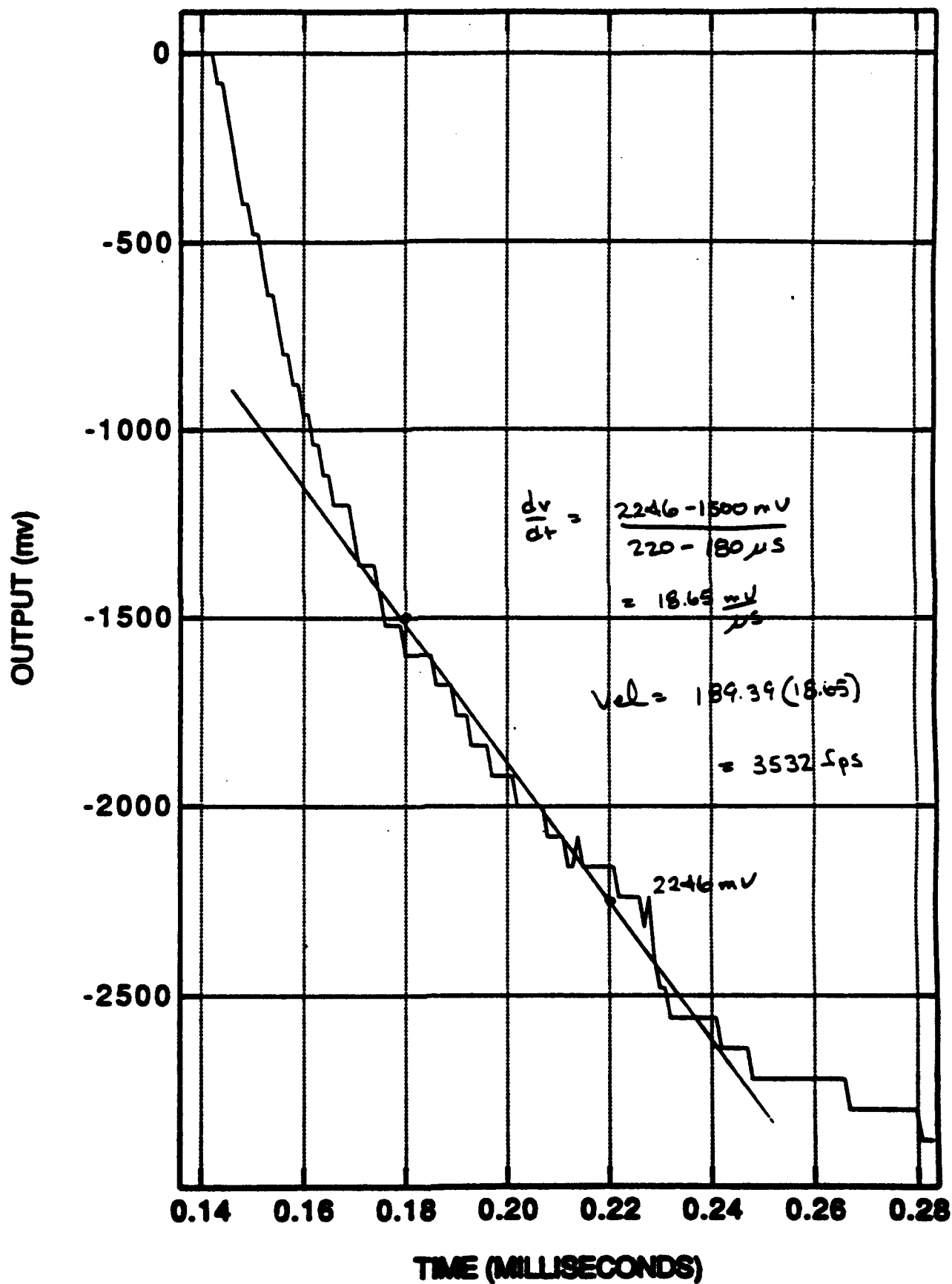
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

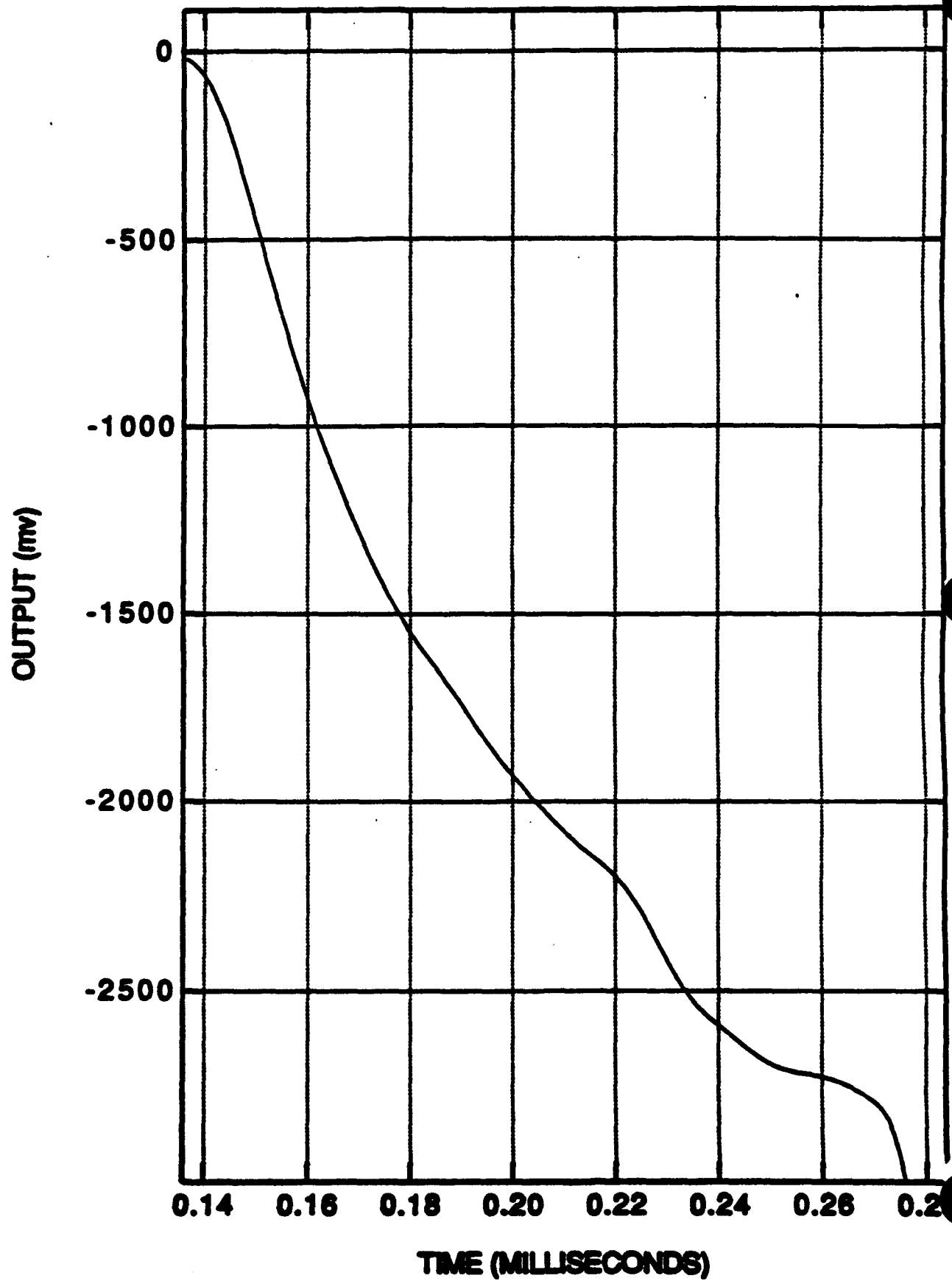
# GAP TEST 103



# GAP TEST 103



# GAP TEST 103



GAP TEST  
PROJECT 01-5132-001

TEST NO. 104 DATE 10/22/92  
SOIL SAMPLE NO. EP-CI-034 4.5-5' TEMPERATURE 74°

RESULTS

PIPE SPLIT NO ✓ YES        LENGTH OF SPLIT       

PIPE FRAGMENTED NO ✓ YES        NO. OF PIECES       

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES        SIZE       

VELOCITY: PEAK 3725 FPS

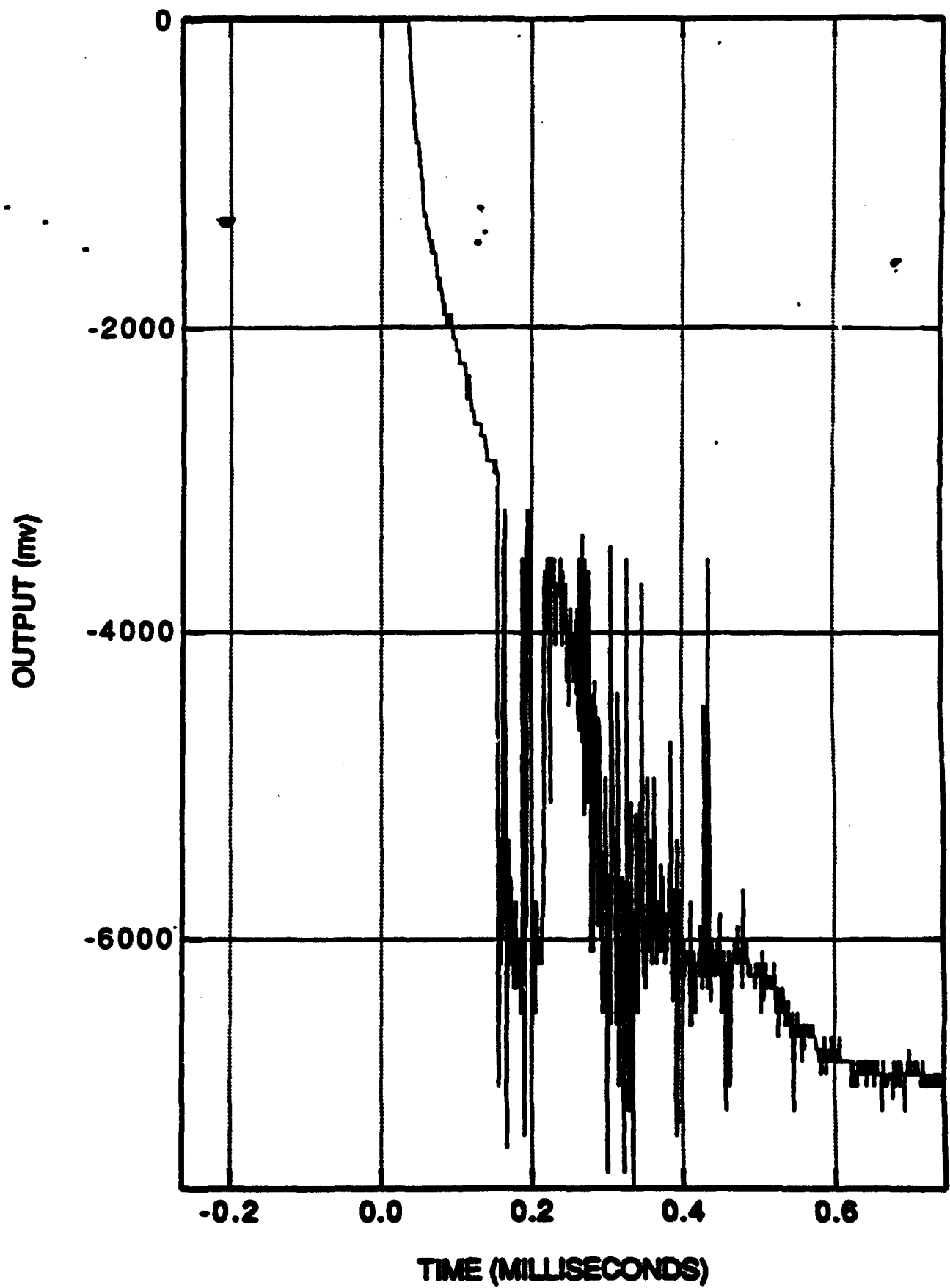
STABLE        DECAYING ✓ INCREASING       

OVERALL RESULT POSITIVE        NEGATIVE ✓

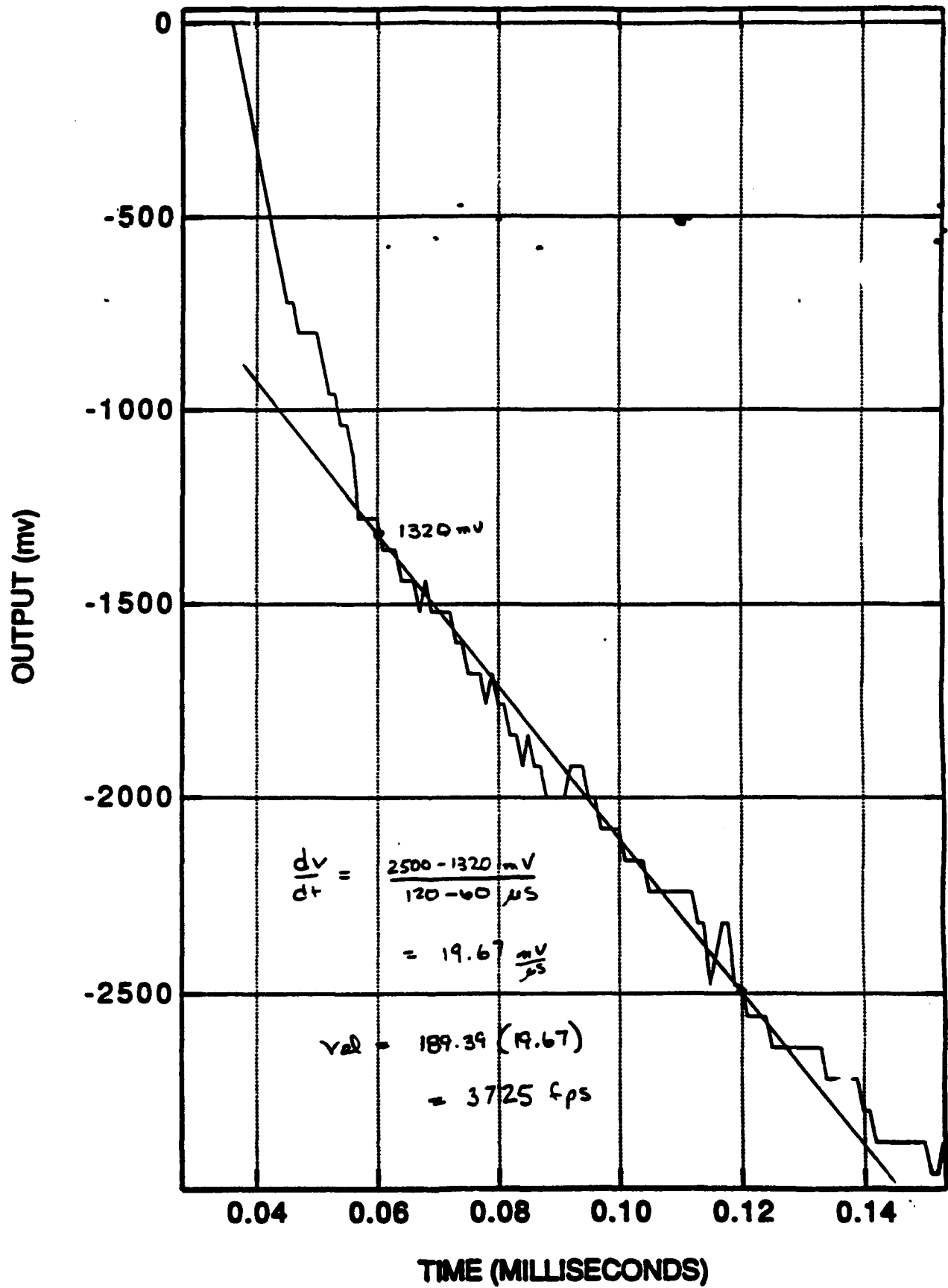
TEST PERSONNEL EZ. & JE

ADDITIONAL COMMENTS:

# GAP TEST 104



# GAP TEST 104





AD-A282 574

FOOLE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SANDS 11/13

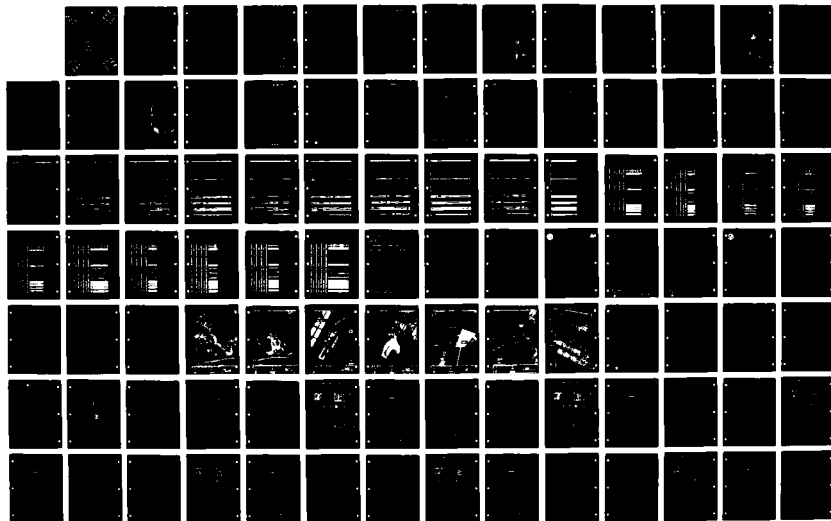
VOLUME 2 APPENDICES A - J REVISION(U) MONTGOMERY

WATSON WALNUT CREEK CA DEC 93 XA-USAEC

UNCLASSIFIED

DAAA15-90-D-0011

NL

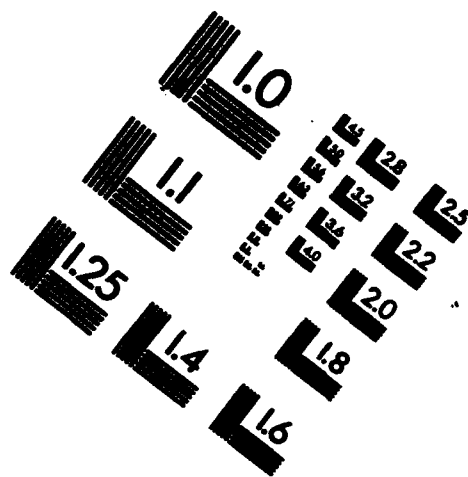
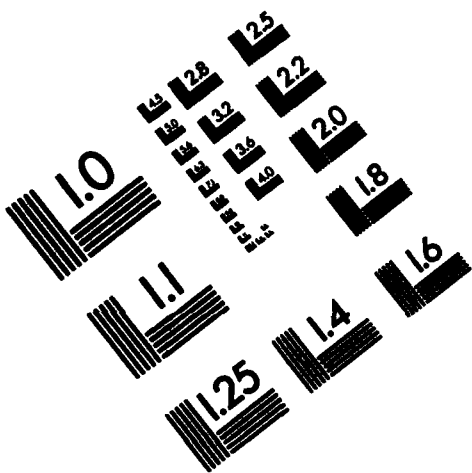




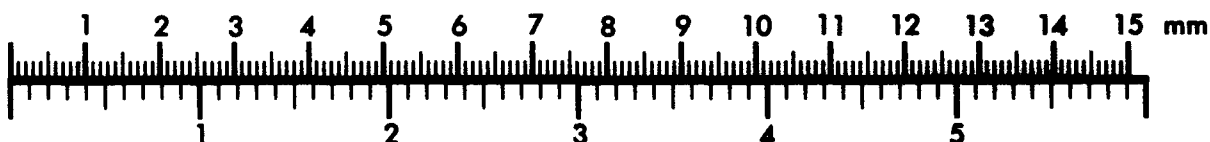
AIM

Association for Information and Image Management

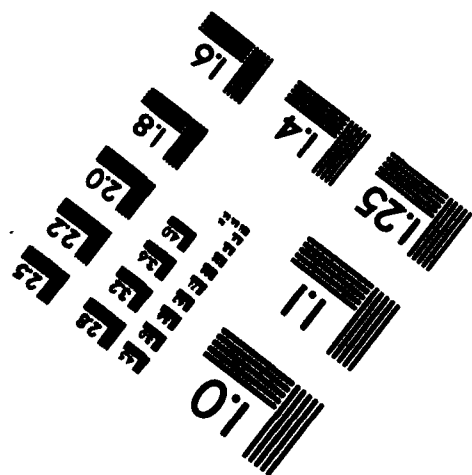
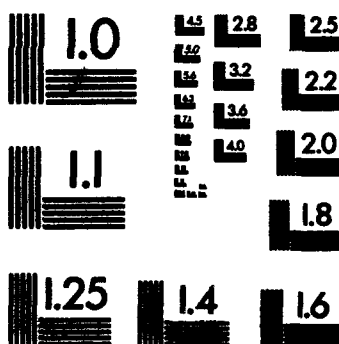
1100 Wayne Avenue, Suite 1100  
Silver Spring, Maryland 20910  
301/587-8202



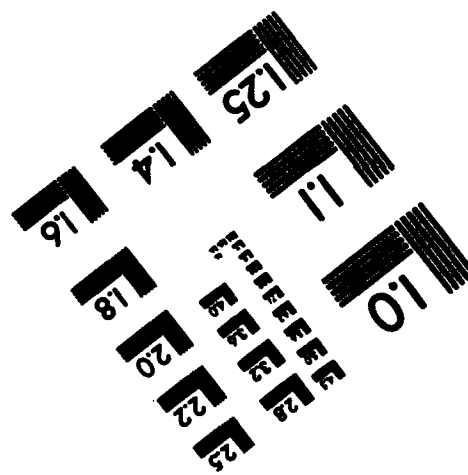
Centimeter



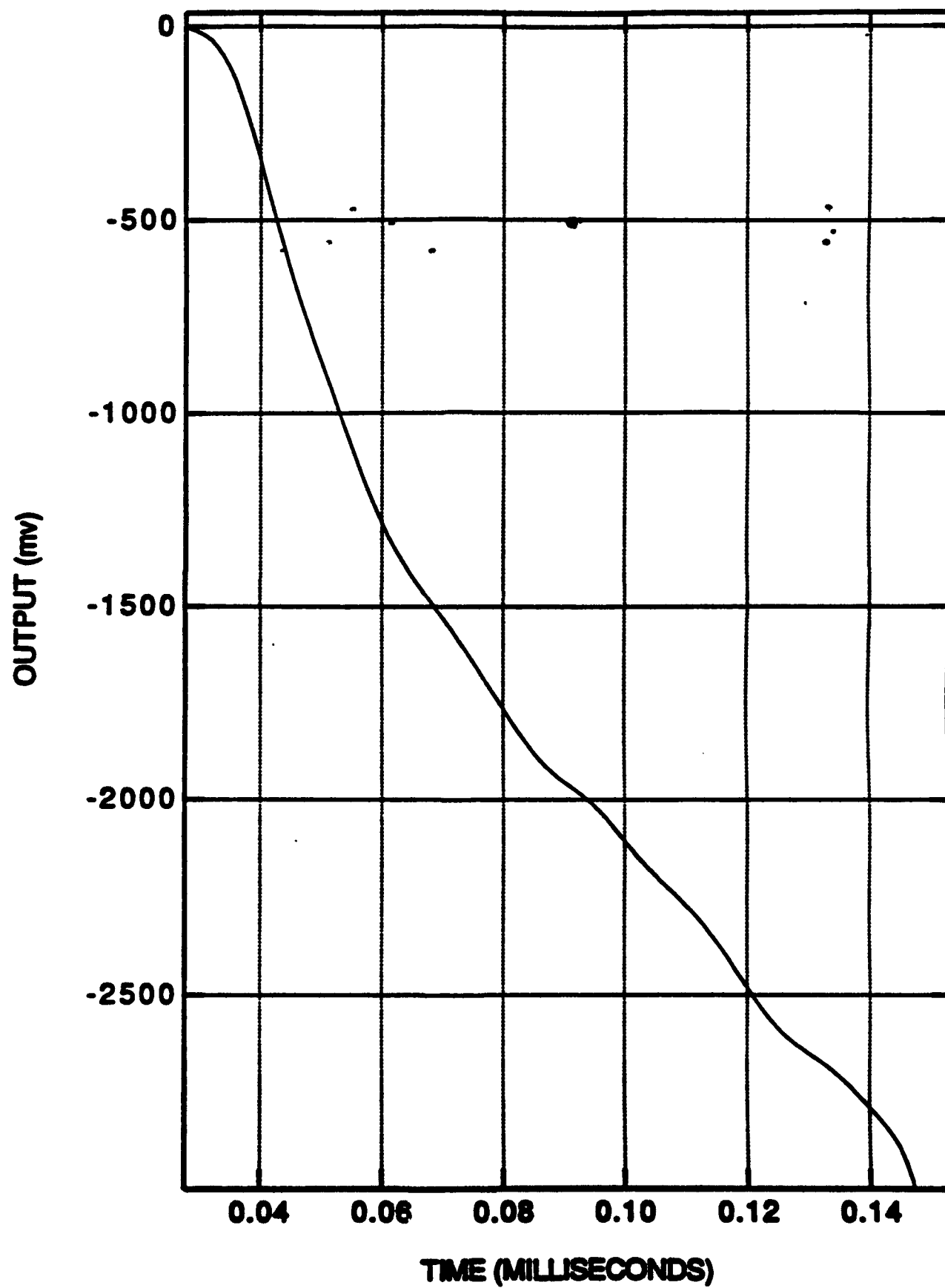
Inches



MANUFACTURED TO AIM STANDARDS  
BY APPLIED IMAGE, INC.



# GAP TEST 104



✓

GAP TEST  
PROJECT 01-5132-001

TEST NO. 105

DATE 10/22/92

SOIL SAMPLE NO. SB-01-003 - 0-1'

TEMPERATURE 82

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE

VELOCITY: PEAK 4773 FPS

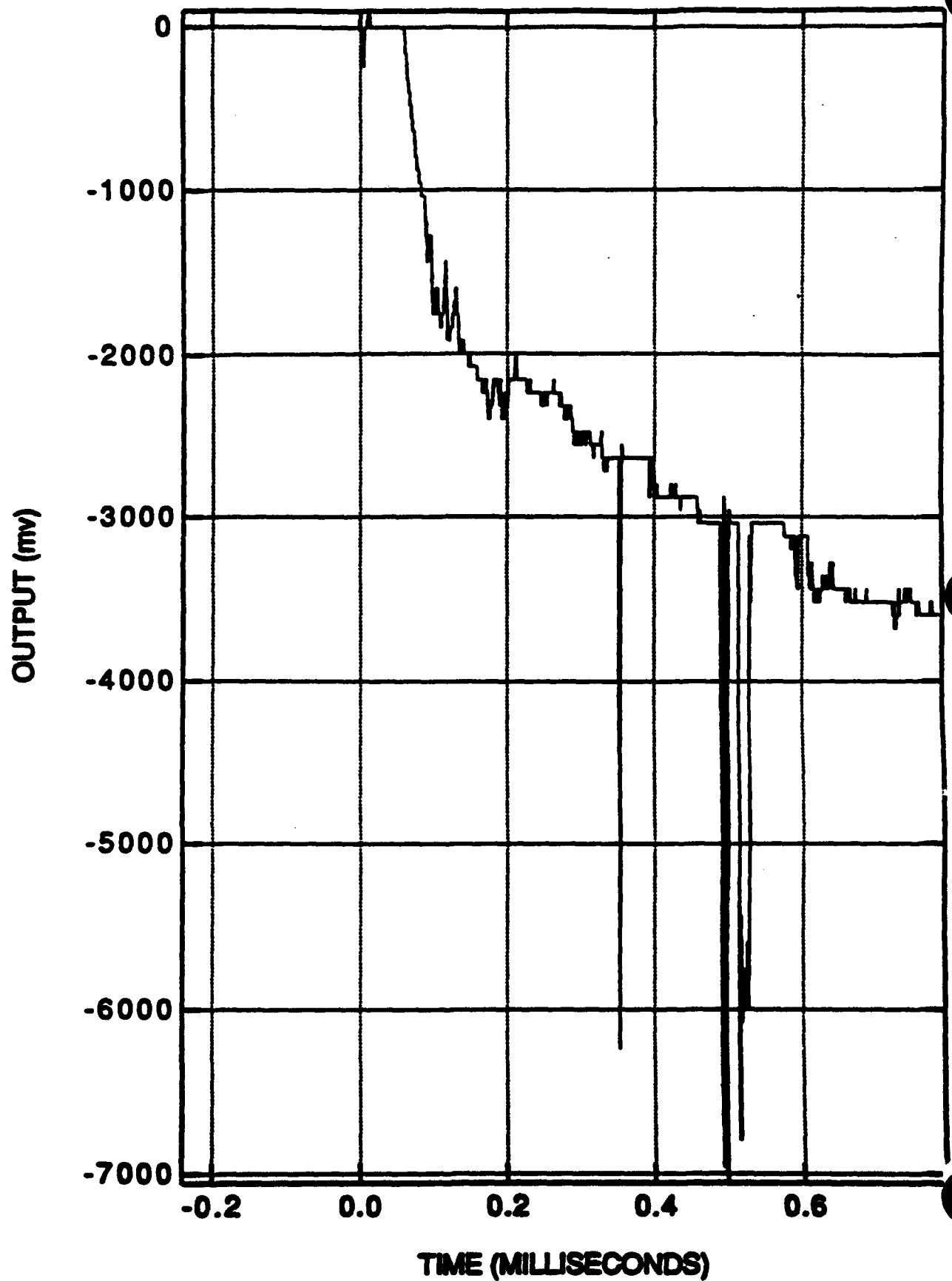
STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

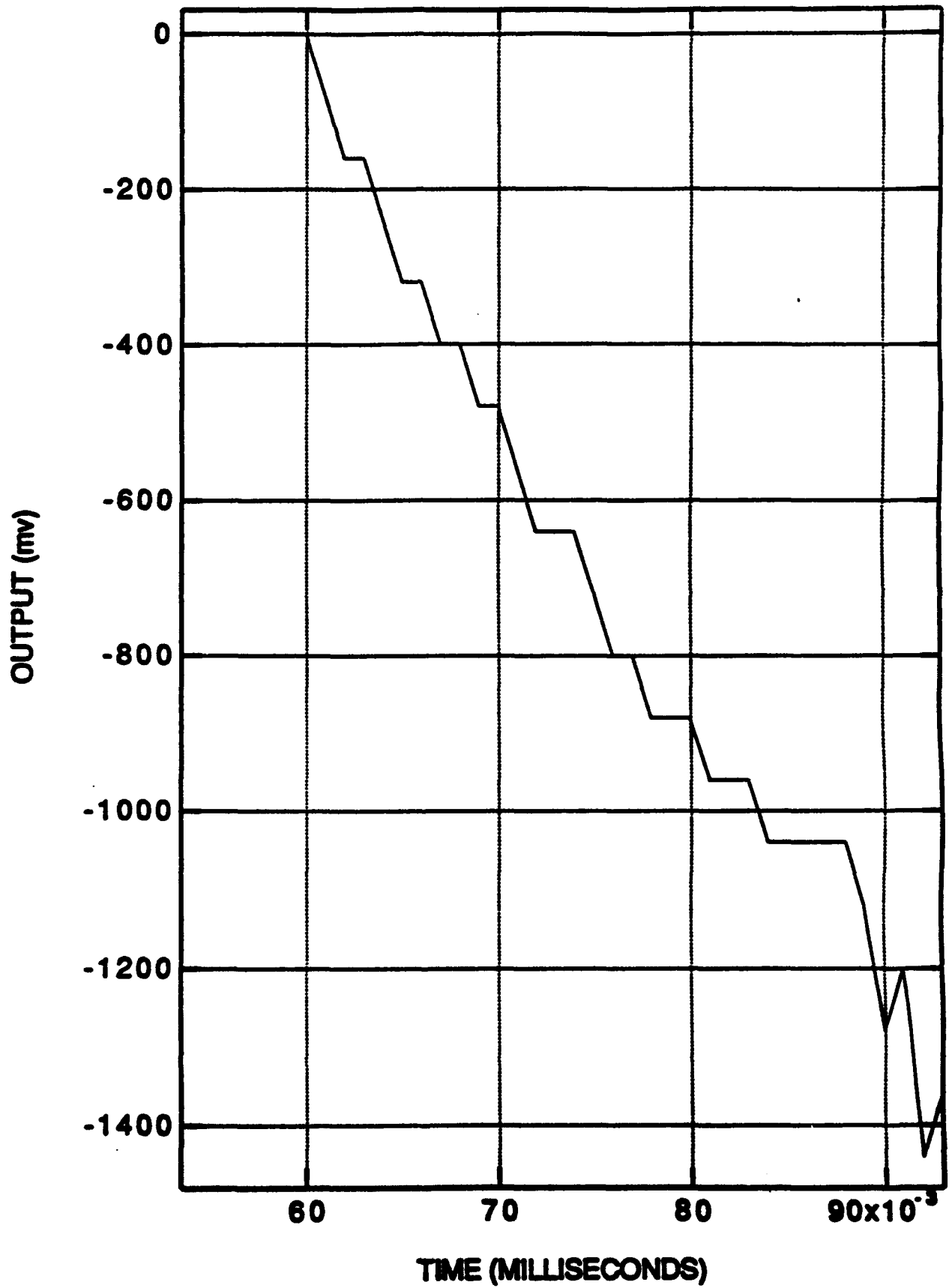
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

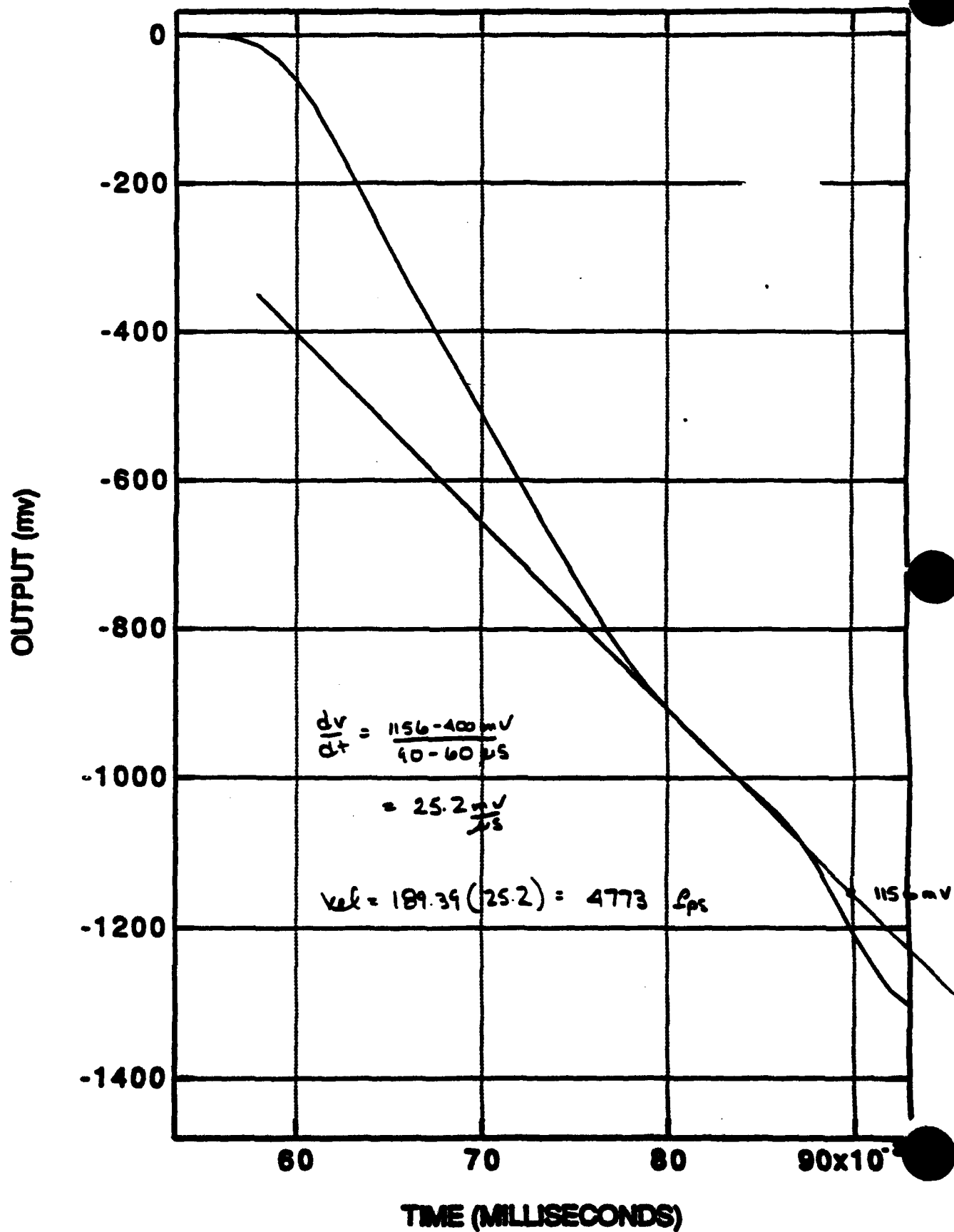
# GAP TEST 105



# GAP TEST 105



# GAP TEST 105



GAP TEST  
PROJECT 01-5132-001

TEST NO. 106 DATE 10/22/92  
SOIL SAMPLE NO. 8B-01-003 0-1' TEMPERATURE 84°

RESULTS

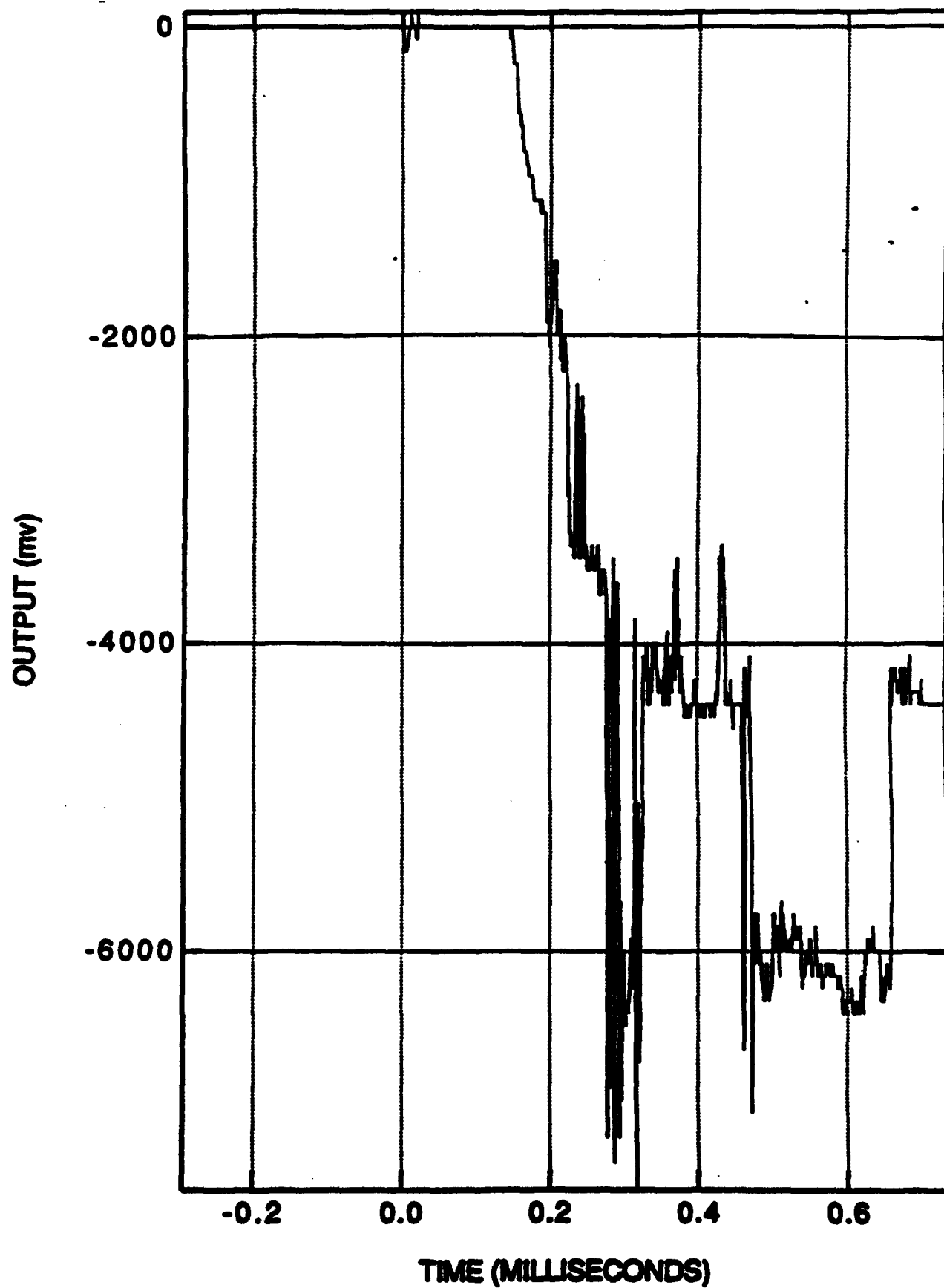
PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT   
PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES   
HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE   
VELOCITY: PEAK 4621 FPS  
STABLE ☐ DECAYING ☒ INCREASING ☐  
OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL EZ + JE

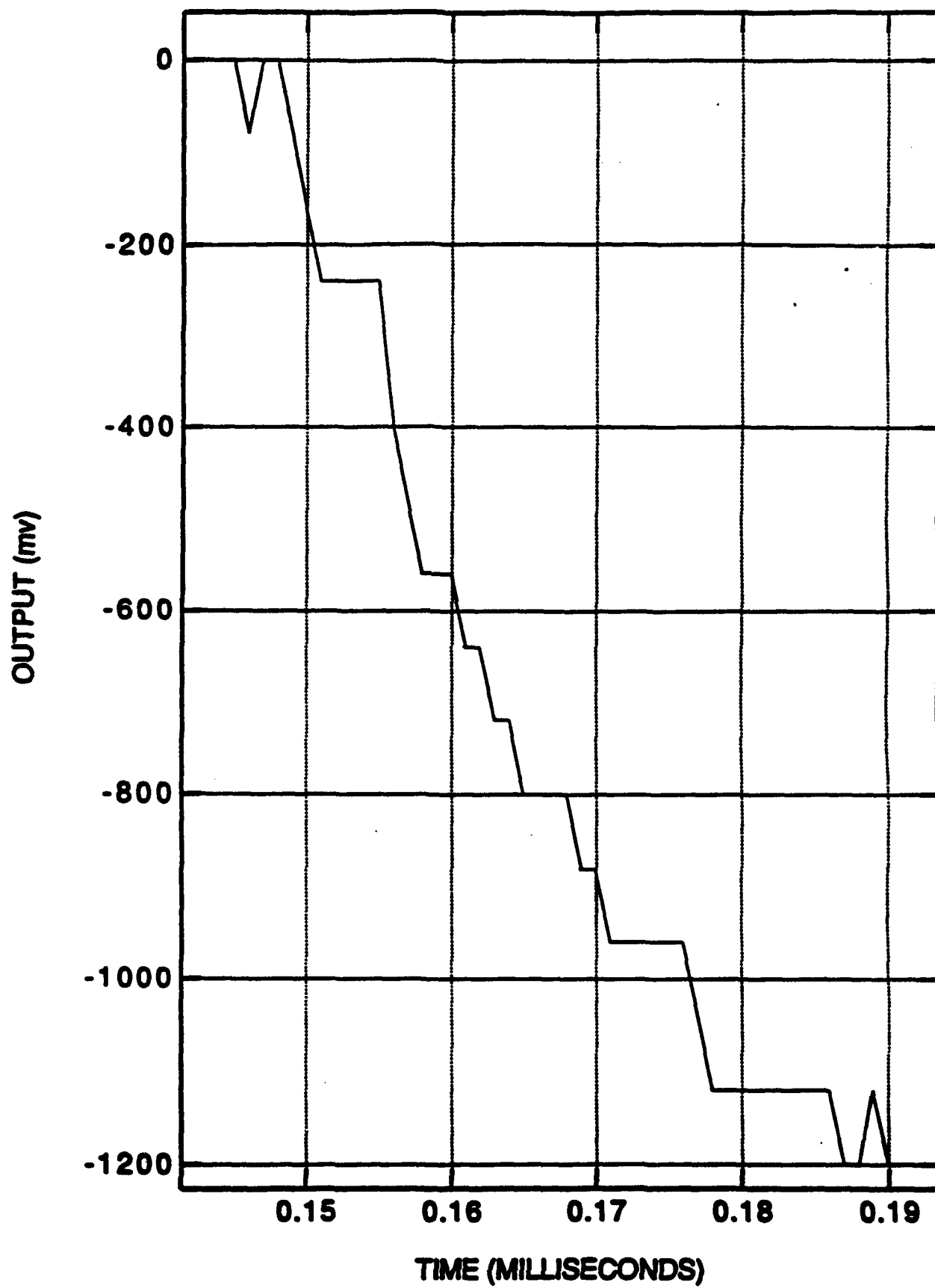
ADDITIONAL COMMENTS:



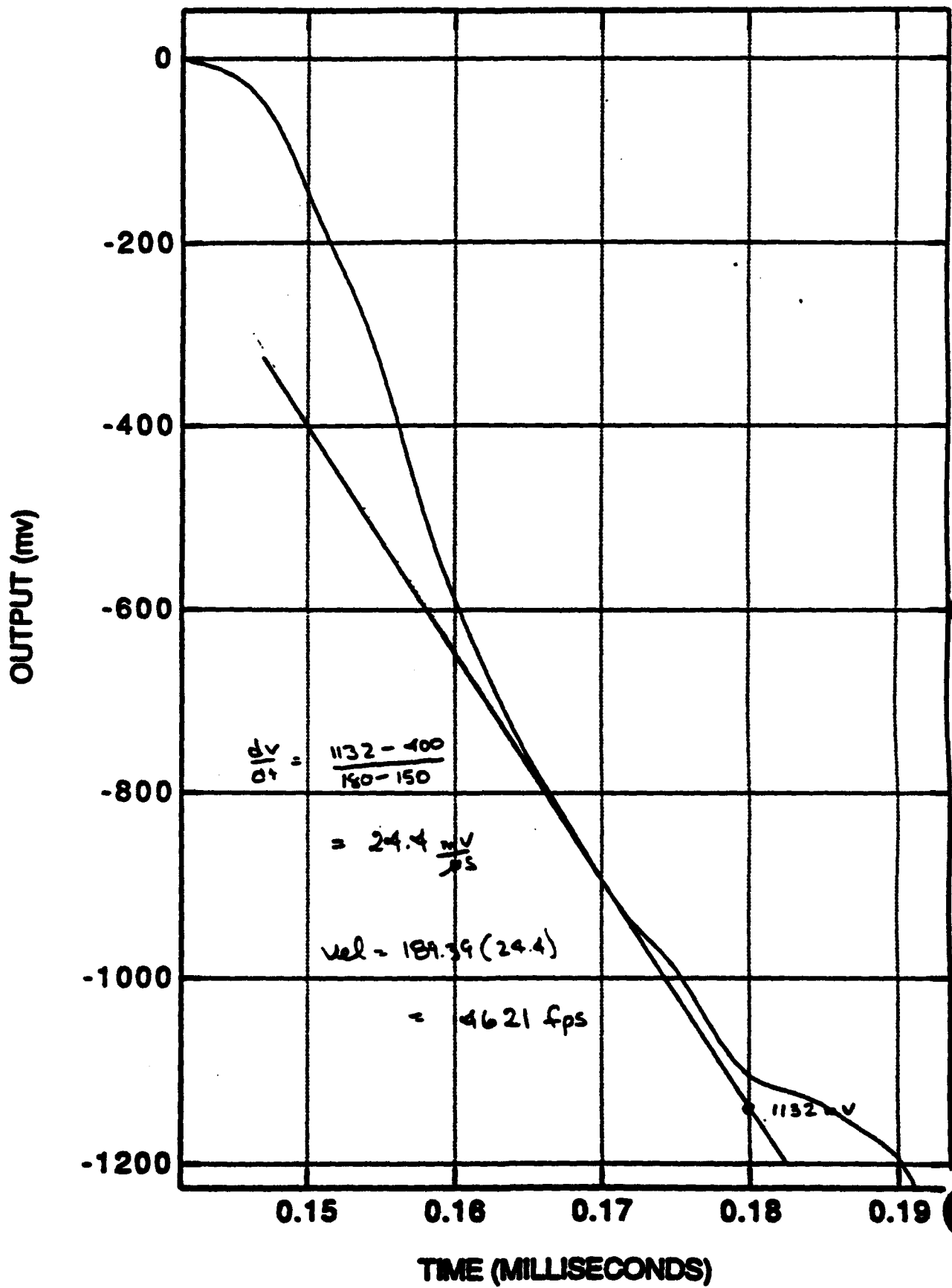
# GAP TEST 106



# GAP TEST 106



# GAP TEST 106



GAP TEST  
PROJECT 01-5132-001

TEST NO. 107 DATE 10/22/92  
SOIL SAMPLE NO. EP-01-092 C-1' TEMPERATURE 80°

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT ☐

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES ☐

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE ☐

VELOCITY: PEAK 5732 FPS

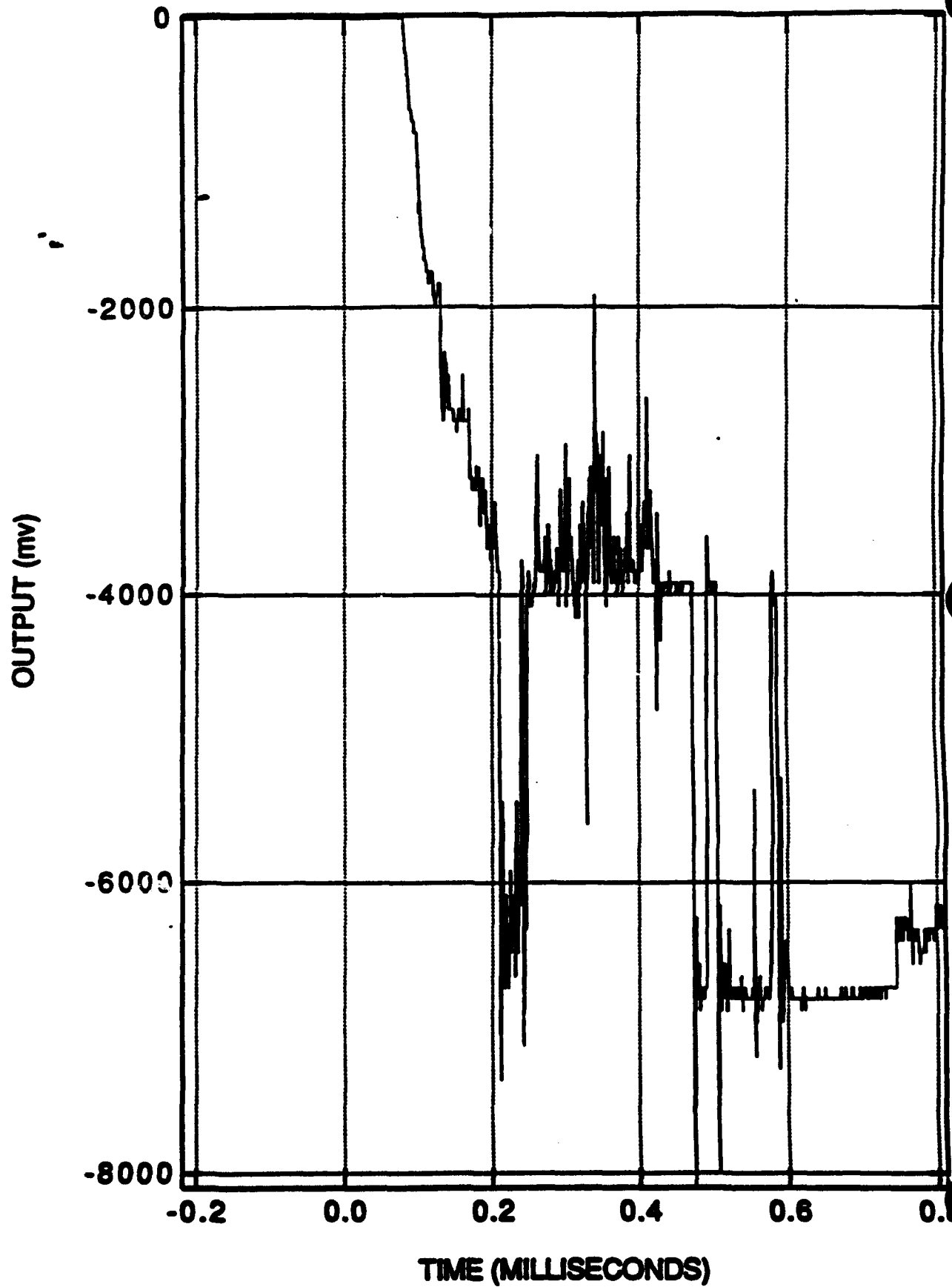
STABLE ☐ DECAYING ☒ INCREASING ☐

OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

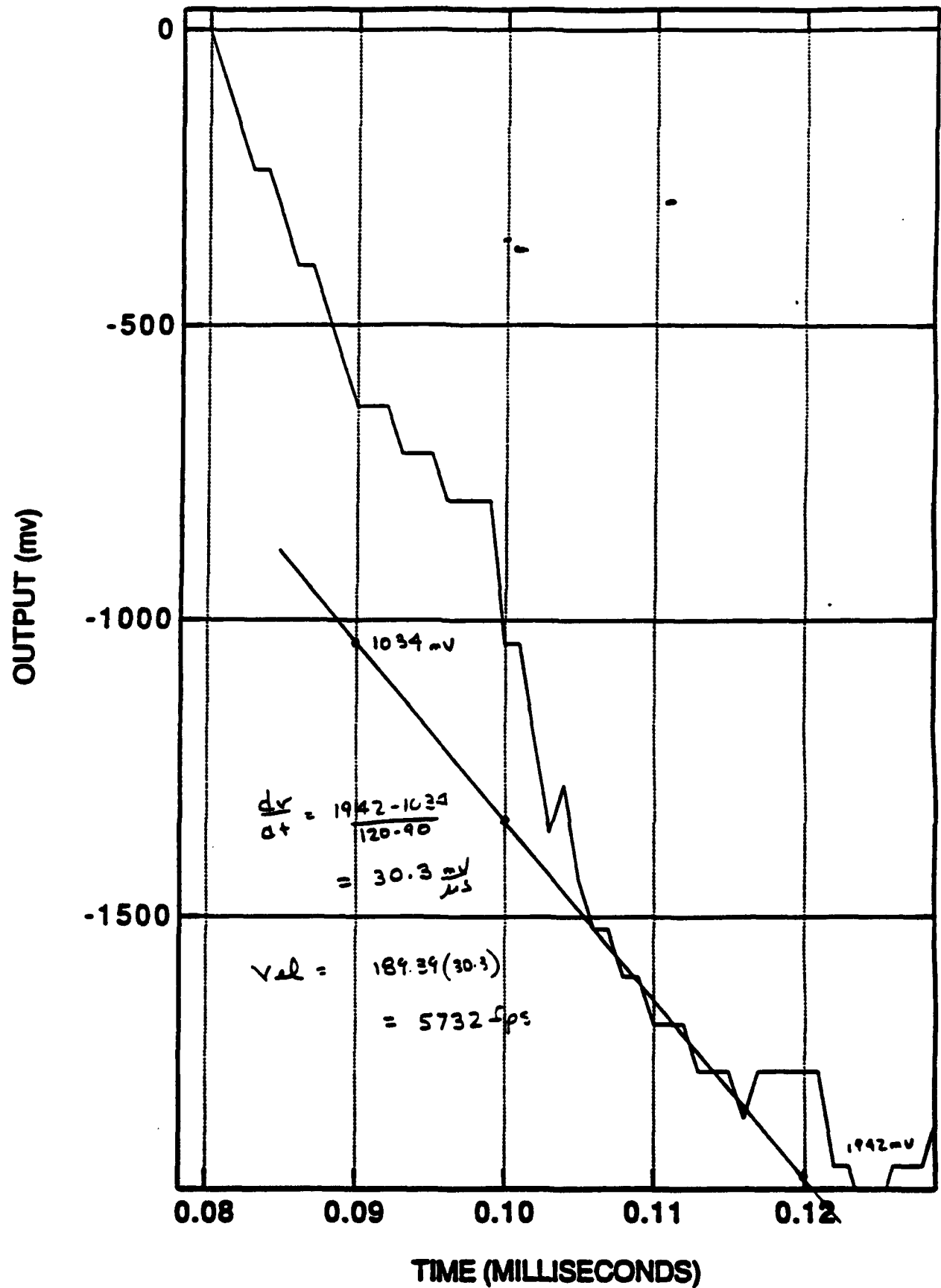
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

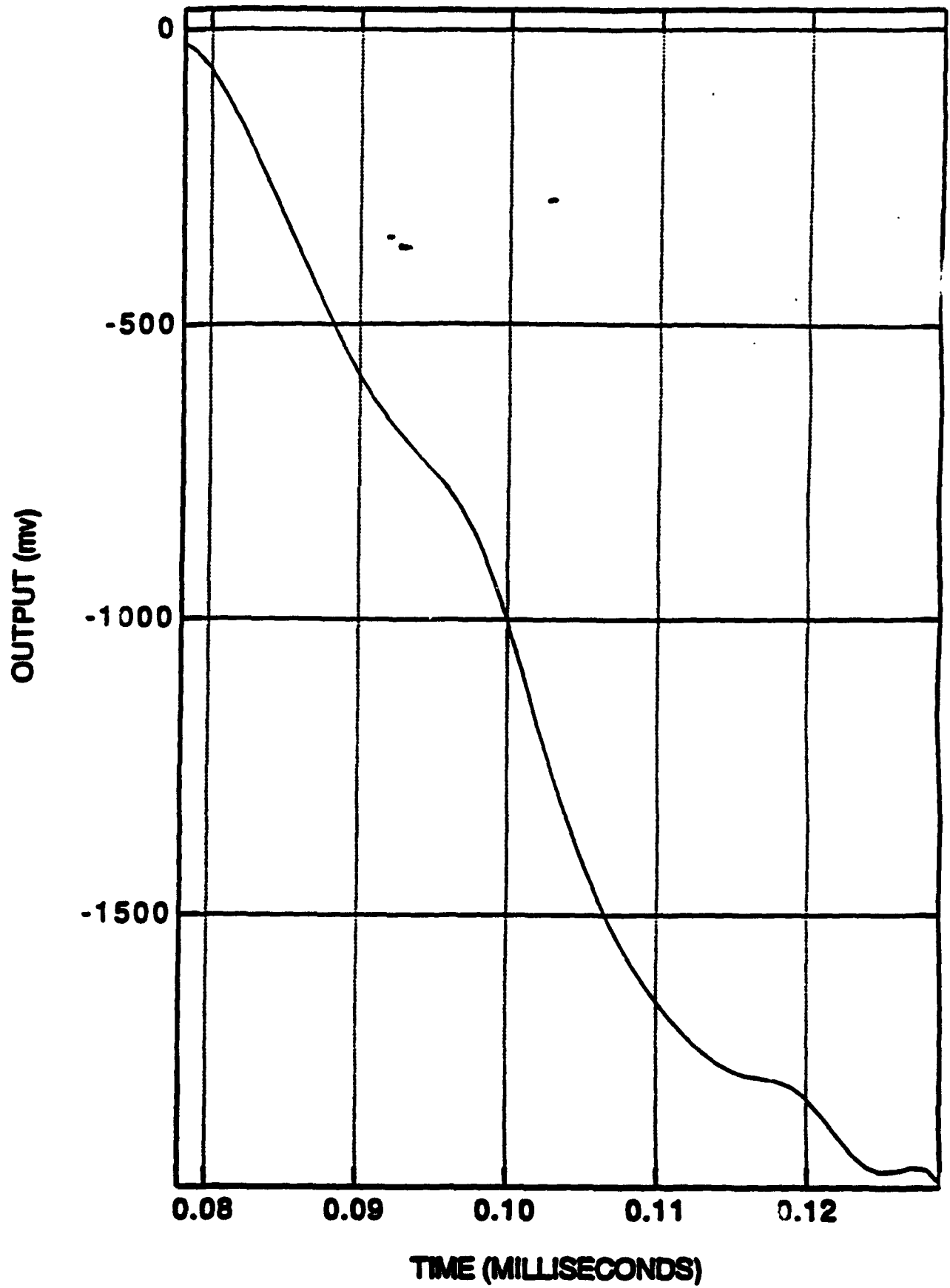
# GAP TEST 107



# GAP TEST 107



# GAP TEST 107



GAP TEST  
PROJECT 01-5132-001

TEST NO. 108 DATE 10/23/92

SOIL SAMPLE NO. EP-01-092 C-1' TEMPERATURE 72°

RESULTS

PIPE SPLIT NO ☒ YES ☐ LENGTH OF SPLIT ☐

PIPE FRAGMENTED NO ☒ YES ☐ NO. OF PIECES ☐

HOLE PUNCHED IN WITNESS PLATE NO ☒ YES ☐ SIZE ☐

VELOCITY: PEAK 6667 FPS

STABLE ☐ DECAYING ☒ INCREASING ☐

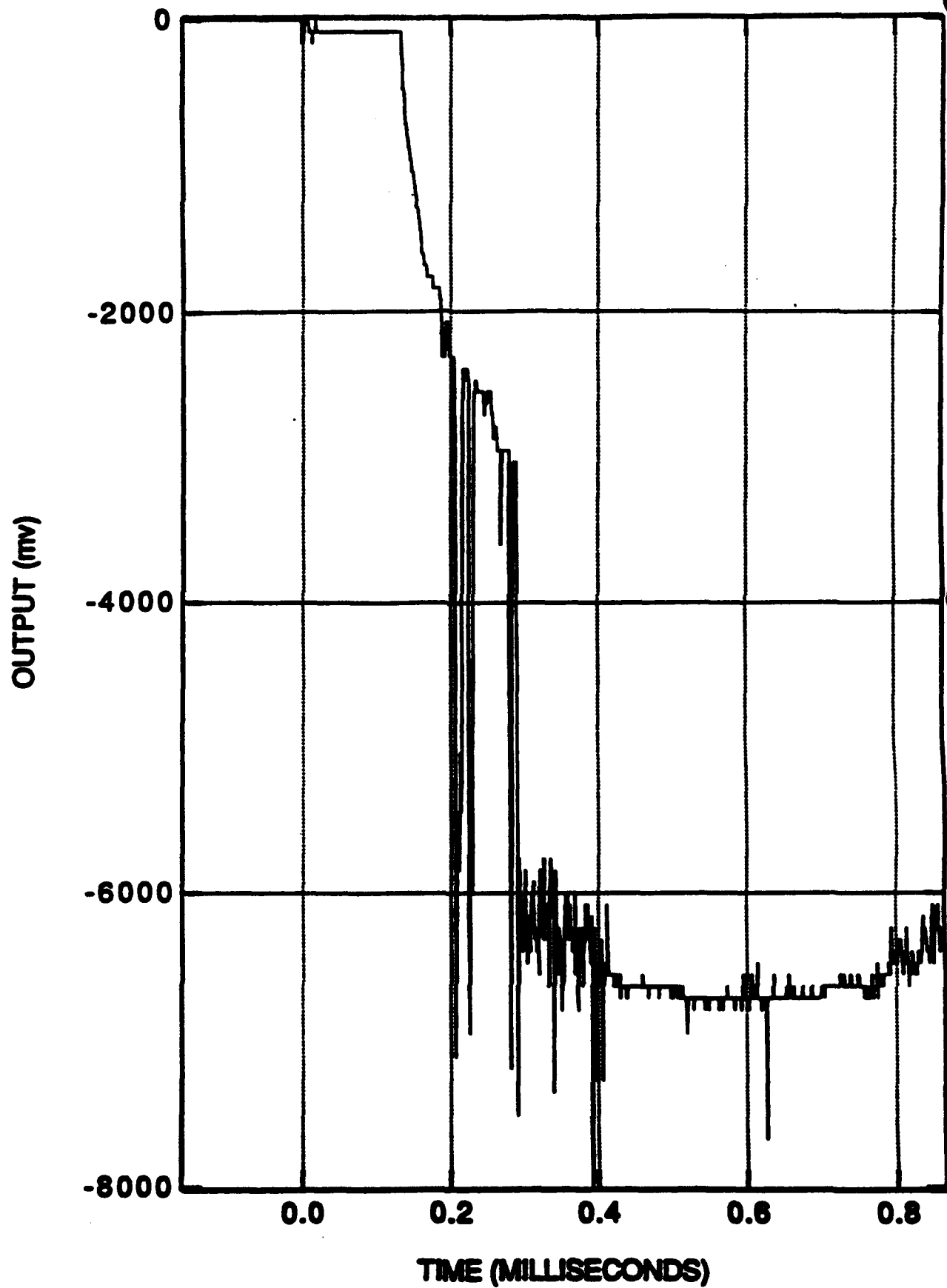
OVERALL RESULT POSITIVE ☐ NEGATIVE ☒

TEST PERSONNEL EZ & JE

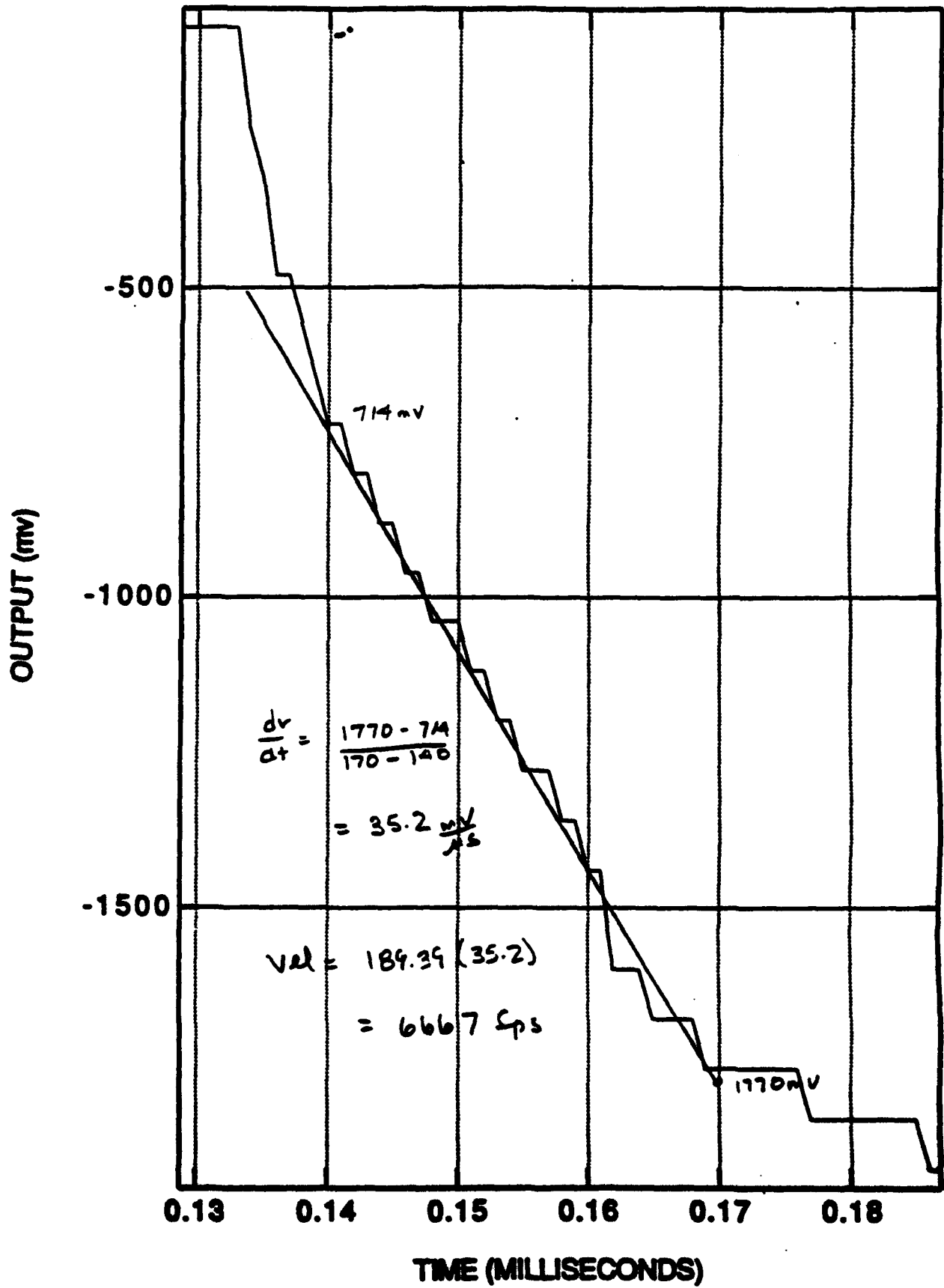
ADDITIONAL COMMENTS:



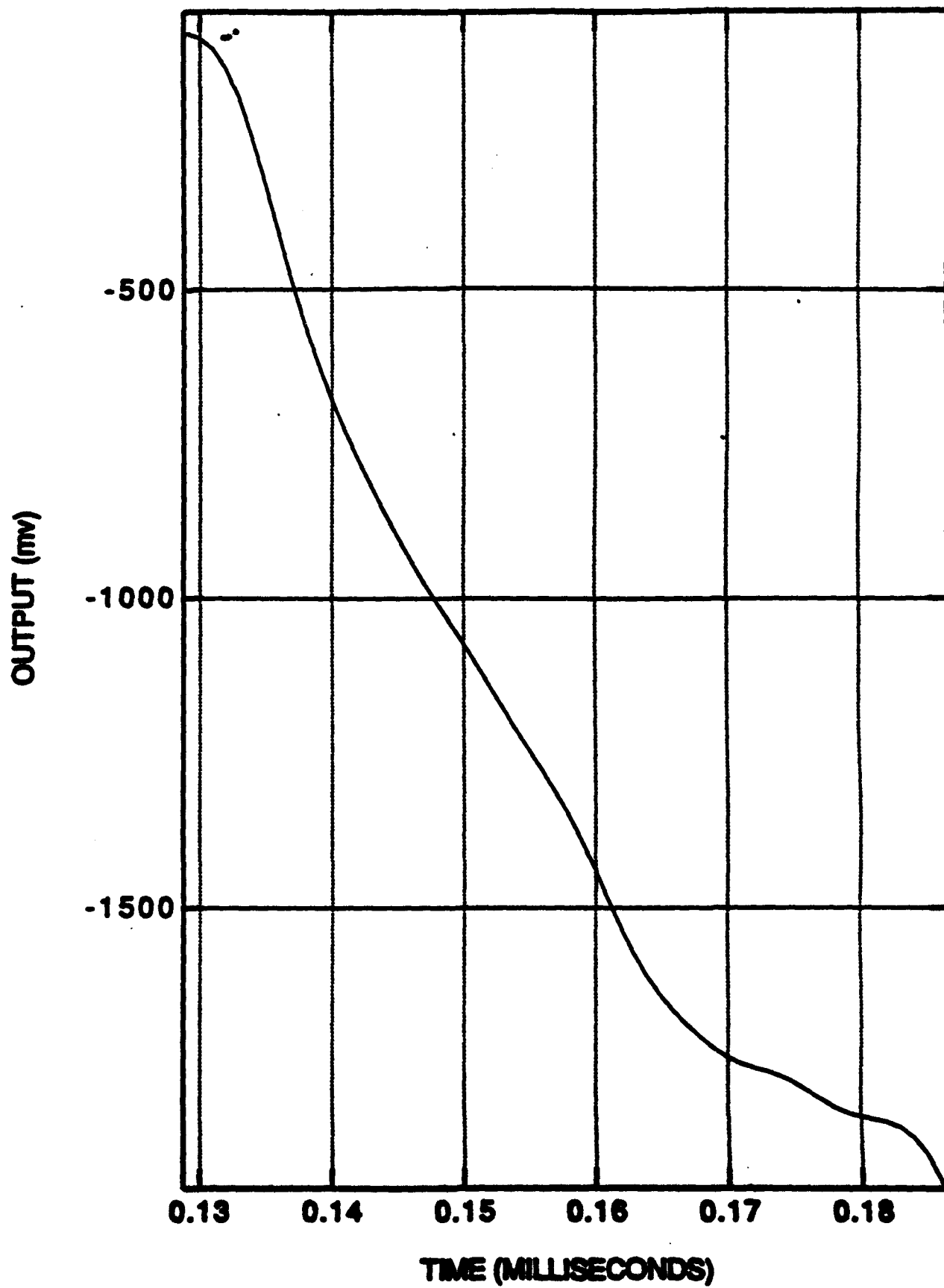
# GAP TEST 108



# GAP TEST 108



# GAP TEST 108



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## Appendix H



**MONTGOMERY WATSON**

## **APPENDIX**

### **FIELD SURVEY DATA**

#### **H.1 INTRODUCTION**

**H.1.0.1.** This appendix presents the location data generated during the field topographic survey activities conducted by subcontractor personnel from Caldwell, Richards, and Sorensen Engineering, Inc. (CRS) prior to sampling activities at the various SWMUs. The purpose of this survey was to provide fixed survey reference points in terms of the Utah State Plane Coordinate System at the separate SWMUs, enabling individual sampling locations to be tied to these points at the time of sampling. Individual sampling locations could then be placed into the Geotechnical Map File (GMA) of the IRDMIS data base. Soil borings which were 25 ft. deep or deeper were surveyed directly by CRS personnel from fixed references.

#### **H.2 SCOPE OF ACTIVITIES**

**H.2.0.1.** The field survey activities were performed in two separate stages during the TEAD-N RFI. These activities are described below.

**H.2.0.2. Topographic Field Survey.** Prior to any field sampling activities, CRS personnel surveyed and marked a total of 48 separate reference locations at 17 SWMUs across TEAD-N. The primary method of marking the individual reference locations consisted of staking a 4 ft. section of wood lath into the ground at the reference point location and labeling the lath with the reference designation. A section of surveyors flagging was usually tied around the uppermost part of the stake for added visibility. At times, fixed objects such as building corners or utility posts were used as reference locations, and the building corner or post itself was flagged and labeled.

**H.2.0.3.** The reference points were used to tie individual sampling sites at each SWMU to the State Plane Coordinate System at the time of sample collection. A tripod-mounted Brunton compass was used to measure angles and establish bearings to and from the established reference points.

**H.2.0.4. Borehole Surveying.** Upon completion of the drilling program, CRS personnel were again on site at TEAD N to survey the locations of the nine deep soil borings

previously drilled at the OB/OD Area, and the 25 ft. soil boring drilled at the Stormwater Discharge Area (SWMU 45).

### **H.3 DATA SUMMARY**

#### **H.3.1. Surveyed Reference Points and Borehole Locations**

**H.3.1.1.** The survey data generated from the SWMU reference points were tied to Utah State plane coordinates as per IRDMIS data base entry requirements. A summary of State plane northing and easting coordinates for each reference point is shown in Table H-1. Also included is the elevation of each reference point in feet above mean sea level. The SWMU reference number is shown with the following designation:

**XX-Y**

where: **XX**=SWMU Number

where: **Y**=Sequential Designation of Reference Locations Within the SWMU

**H.3.1.2.** The final entry on Table H-1 is for Water Well No. 3 (WW-3), which was the source for the approved water used during the field work.

**H.3.1.3.** Table H-2 shows the State plane northing and easting coordinates and elevations for the surveyed boreholes. The elevations shown are for the ground surface immediately adjacent to each borehole. The borehole designation follows the convention:

**SB-XX-YY**

where: **SB** = Soil Boring

**XX** = SWMU Number or **BK** = background

**YY** = sequential boring number within that SWMU

#### **H.3.2. Sample Location Data**

**H.3.2.1.** Table H-3 presents the data entered into the GMA from the RFI field sampling locations. These data include all source and accuracy codes, as required. The majority of sample locations from the RFI were entered with the X, Y Accuracy Code of "F", which

designates an accuracy of 100 meters laterally, and a GS Accuracy (elevation) Code of "1", designating an accuracy of 10 feet vertically.

**TABLE H-1**  
**TOOELE ARMY DEPOT SWMU SITE COORDINATES**  
**6/11/92**  
**NAD 1927 STATE PLANE COORDINATE DATA**  
**UTAH CENTRAL ZONE COORDINATES**

<b>SWMU #</b>	<b>NORTHING</b>	<b>EASTING</b>	<b>ELEVATION</b>
1A-1	793,431.47	1,728,024.23	5,101.29
1A-2	791,621.11	1,728,347.83	5,080.18
1A-3	792,579.81	1,728,622.45	5,078.94
1-4	791,651.51	1,729,258.41	5,067.84
1-5	790,401.45	1,729,919.58	5,047.76
1D-6	789,889.45	1,729,322.98	5,051.06
1B-1	789,648.58	1,732,502.63	5,009.92
1B-2	789,118.08	1,732,882.50	4,991.73
1B-3	790,588.98	1,732,182.87	5,062.34
1C-1	789,825.03	1,733,847.433	4,968.29
14-1	799,758.12	1,759,680.62	4,694.79
14-2	800,246.38	1,759,827.73	4,693.65
19-1	792,861.38	1,733,797.37	5,011.41
19-2	792,673.72	1,733,941.36	5,011.06
19-3	792,604.81	1,733,526.31	5,011.52
19-4	792,856.60	1,733,339.66	5,012.25
19-5	793,207.10	1,733,946.80	5,007.05
20-1	795,122.62	1,732,462.10	5,010.53



<b>SWMU #</b>	<b>NORTHING</b>	<b>EASTING</b>	<b>ELEVATION</b>
20-2	794,746.99	1,732,391.35	5,017.17
21-1	794,252.03	1,739,161.10	4,796.77
21-2	794,153.34	1,739,139.03	4,796.86
26-1	799,795.84	1,766,147.26	4,838.41
26-2	799,365.87	1,766,907.47	4,864.91
26-3	800,481.36	1,767,090.59	4,858.05
26-4	800,671.30	1,766,681.95	4,841.22
26-5	801,957.49	1,767,447.77	4,839.16
26-6	801,994.98	1,767,383.73	4,835.33
26-7	802,228.89	1,767,514.42	4,833.87
26-8	801,782.43	1,768,461.69	4,863.44
26-9	801,441.81	1,768,208.86	4,866.75
26-10	799,913.36	1,767,344.06	4,866.06
27-1	793,629.14	1,764,509.55	4,865.45
27-2	793,795.40	1,764,390.90	4,863.49
28-1	798,276.11	1,763,451.17	4,801.53
28-2	798,617.42	1,763,264.13	4,792.63
29-1	797,426.29	1,763,382.12	4,812.34
29-2	797,456.11	1,763,330.07	4,810.85
29-3	798,842.37	1,762,904.27	4,800.45
34-1	790,816.06	1,764,718.81	4,881.58
34-2	793,081.72	1,764,662.47	4,878.36

<b>SWMU #</b>	<b>NORTHING</b>	<b>EASTING</b>	<b>ELEVATION</b>
37-1	793,130.77	1,738,381.92	4,829.06
37-2	792,928.24	1,738,439.13	4,827.50
42-1	794,778.46	1,765,190.10	4,873.20
42-2	794,607.97	1,765,033.54	4,872.25
42-3	794,650.67	1,764,983.31	4,868.46
42-4	794,808.35	1,764,799.86	4,863.51
42-5	794,988.77	1,764,583.07	4,853.37
45-1	795,144.34	1,763,254.04	4,800.46
WW-3	797,690.29	1,764,914.48	4,833.00

**TABLE H-2**

**SWMU SITES BORE HOLE LOCATIONS**

**8/20/92**

**NAD 1927 STATE PLANE COORDINATE DATA  
UTAH CENTRAL ZONE COORDINATES**

<b>BORE HOLE #</b>	<b>NORTHING</b>	<b>EASTING</b>	<b>ELEVATION</b>
SB-01-001	792,433.27	1,728,465.03	5,079.12
SB-001-002	792,165.79	1,729,037.11	5,066.21
SB-001-003	791,632.91	1,728,990.06	5,066.83
SB-001-004	791,361.88	1,728,218.71	5,082.89
SB-01-005	789,959.21	1,729,523.94	5,048.48
SB-BK-006	787,501.10	1,727,024.49	5,126.05
SB-01-006	790,190.57	1,732,668.24	5,017.15
SB-01-007	789,244.92	1,732,749.27	4,994.07
SB-01-008	789,492.91	1,733,152.54	4,987.85
SB-45-001	795,169.80	1,763,257.99	4,799.59

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GIS Elevation	GIS Source	GIS Acc Code	Int
EXCV	EP-01-001	793,284	1,728,261	M	2	5087	M	1	DCD
EXCV	EP-01-002	793,276	1,728,125	M	2	5087	M	1	DCD
EXCV	EP-01-003	793,220	1,728,236	M	2	5090	M	1	DCD
EXCV	EP-01-004	793,150	1,728,100	M	2	5090	M	1	DCD
EXCV	EP-01-005	793,075	1,728,275	M	2	5085	M	1	DCD
EXCV	EP-01-006	793,087	1,728,200	M	2	5085	M	1	DCD
EXCV	EP-01-007	792,813	1,728,442	M	2	5085	M	1	DCD
EXCV	EP-01-008	792,775	1,728,375	M	2	5082	M	1	DCD
EXCV	EP-01-009	792,400	1,728,625	M	2	4077	M	1	DCD
EXCV	EP-01-010	792,300	1,728,650	M	2	4076	M	1	DCD
EXCV	EP-01-011	792,549	1,728,445	M	2	5080	M	1	DCD
EXCV	EP-01-012	792,985	1,728,250	M	2	5086	M	1	DCD
EXCV	EP-01-013	792,150	1,728,700	M	2	5075	M	1	DCD
EXCV	EP-01-014	791,765	1,728,938	M	2	5067	M	1	DCD
EXCV	EP-01-015	791,825	1,728,600	M	2	5072	M	1	DCD
EXCV	EP-01-016	792,100	1,728,350	M	2	5076	M	1	DCD
EXCV	EP-01-017	792,175	1,728,350	M	2	5076	M	1	DCD
EXCV	EP-01-018	792,225	1,728,325	M	2	5078	M	1	DCD
EXCV	EP-01-019	792,450	1,728,400	M	2	5076	M	1	DCD
EXCV	EP-01-020	791,925	1,728,525	M	2	5072	M	1	DCD
EXCV	EP-01-021	792,900	1,728,700	M	2	5091	M	1	DCD
EXCV	EP-01-022	792,850	1,728,675	M	2	5089	M	1	DCD
EXCV	EP-01-023	792,800	1,728,777	M	2	5090	M	1	DCD
EXCV	EP-01-024	792,600	1,728,675	M	2	5083	M	1	DCD
EXCV	EP-01-025	792,425	1,728,750	M	2	5080	M	1	DCD
EXCV	EP-01-026	792,325	1,728,750	M	2	5078	M	1	DCD
EXCV	EP-01-027	792,447	1,728,926	M	2	5080	M	1	DCD
EXCV	EP-01-028	792,654	1,729,019	M	2	5089	M	1	DCD
EXCV	EP-01-029	792,752	1,728,909	M	2	5095	M	1	DCD
EXCV	EP-01-030	792,821	1,728,780	M	2	5085	M	1	DCD
EXCV	EP-01-031	790,775	1,729,375	M	2	5053	M	1	DCD
EXCV	EP-01-032	790,875	1,729,350	M	2	5058	M	1	DCD
EXCV	EP-01-033	790,975	1,729,300	M	2	5060	M	1	DCD
EXCV	EP-01-034	791,075	1,729,300	M	2	5061	M	1	DCD

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
EXCV	EP-01-035	791,175	1,729,275	M	2	5062	M	1	DCD
EXCV	EP-01-036	791,275	1,729,275	M	2	5063	M	1	DCD
EXCV	EP-01-037	791,375	1,729,245	M	2	5064	M	1	DCD
EXCV	EP-01-038	791,475	1,729,225	M	2	5065	M	1	DCD
EXCV	EP-01-039	791,575	1,729,175	M	2	5066	M	1	DCD
EXCV	EP-01-040	791,650	1,729,150	M	2	5067	M	1	DCD
EXCV	EP-01-041	791,890	1,729,250	M	2	5069	M	1	DCD
EXCV	EP-01-042	790,601	1,729,461	M	2	5050	M	1	DCD
EXCV	EP-01-043	790,520	1,729,492	M	2	5050	M	1	DCD
EXCV	EP-01-044	790,514	1,729,433	M	2	5050	M	1	DCD
EXCV	EP-01-045	790,575	1,729,275	M	2	5058	M	1	DCD
EXCV	EP-01-046	790,442	1,729,461	M	2	5050	M	1	DCD
EXCV	EP-01-047	790,384	1,729,513	M	2	5050	M	1	DCD
EXCV	EP-01-048	790,316	1,729,541	M	2	5050	M	1	DCD
EXCV	EP-01-049	790,201	1,729,567	M	2	5050	M	1	DCD
EXCV	EP-01-050	791,233	1,728,862	M	2	5068	M	1	DCD
EXCV	EP-01-051	791,175	1,728,950	M	2	5068	M	1	DCD
EXCV	EP-01-052	791,102	1,728,325	M	2	5080	M	1	DCD
EXCV	EP-01-053	791,234	1,727,663	M	2	5068	M	1	DCD
EXCV	EP-01-054	792,218	1,728,910	M	2	5075	M	1	DCD
EXCV	EP-01-055	792,200	1,729,075	M	2	5062	M	1	DCD
EXCV	EP-01-056	792,100	1,729,200	M	2	5110	M	1	DCD
EXCV	EP-01-057	791,950	1,729,125	M	2	5062	M	1	DCD
EXCV	EP-01-058	791,850	1,729,275	M	2	5062	M	1	DCD
EXCV	EP-01-059	791,667	1,728,520	M	2	5072	M	1	DCD
EXCV	EP-01-060	791,125	1,728,650	M	2	5049	M	1	DCD
EXCV	EP-01-061	791,113	1,728,672	M	2	5049	M	1	DCD
EXCV	EP-01-062	791,353	1,729,557	M	2	5060	M	1	DCD
EXCV	EP-01-063	790,744	1,729,722	M	2	5047	M	1	DCD
EXCV	EP-01-064	790,250	1,729,975	M	2	5043	M	1	DCD
EXCV	EP-01-065	790,092	1,730,199	M	2	5042	M	1	DCD
EXCV	EP-01-066	791,775	1,729,450	M	2	5100	M	1	DCD
EXCV	EP-01-067	791,700	1,729,625	M	2	5100	M	1	DCD
EXCV	EP-01-068	791,550	1,729,750	M	2	5095	M	1	DCD
EXCV	EP-01-069	791,325	1,729,950	M	2	5100	M	1	DCD
EXCV	EP-01-070	790,900	1,730,100	M	2	5095	M	1	DCD

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Lat
EXCV	EP-01-071	790,700	1,730,025	M	2	5085	M	1	DCD
EXCV	EP-01-072	791,175	1,729,025	M	2	5086	M	1	DCD
EXCV	EP-01-073	791,180	1,729,075	M	2	5084	M	1	DCD
EXCV	EP-01-074	791,185	1,729,150	M	2	5083	M	1	DCD
EXCV	EP-01-075	791,657	1,728,802	M	2	5089	M	1	DCD
EXCV	EP-01-076	791,000	1,729,925	M	2	5050	M	1	DCD
EXCV	EP-01-077	789,700	1,730,375	M	2	5031	M	1	DCD
EXCV	EP-01-078	789,425	1,730,450	M	2	5019	M	1	DCD
EXCV	EP-01-079	789,225	1,730,575	M	2	5018	M	1	DCD
EXCV	EP-01-080	789,800	1,730,800	M	2	5019	M	1	DCD
EXCV	EP-01-081	789,950	1,730,350	M	2	5037	M	1	DCD
EXCV	EP-01-082	791,750	1,728,575	M	2	5069	M	1	DCD
EXCV	EP-01-083	789,575	1,728,575	M	2	5065	M	1	DCD
EXCV	EP-01-084	789,575	1,728,525	M	2	5062	M	1	DCD
EXCV	EP-01-085	789,575	1,728,925	M	2	5058	M	1	DCD
EXCV	EP-01-086	789,700	1,729,200	M	2	5049	M	1	DCD
EXCV	EP-01-087	789,800	1,728,550	M	2	5066	M	1	DCD
EXCV	EP-01-088	789,800	1,728,550	M	2	5061	M	1	DCD
EXCV	EP-01-089	789,800	1,728,950	M	2	5059	M	1	DCD
EXCV	EP-01-090	792,150	1,728,250	M	2	5078	M	1	DCD
EXCV	EP-01-091	792,100	1,728,250	M	2	5078	M	1	DCD
EXCV	EP-01-092	791,300	1,727,850	M	2	5093	M	1	DCD
EXCV	EP-01-093	791,350	1,728,100	M	2	5087	M	1	DCD
EXCV	EP-01-094	791,350	1,728,300	M	2	5082	M	1	DCD
EXCV	EP-01-095	791,350	1,728,625	M	2	5074	M	1	DCD
EXCV	EP-01-096	791,075	1,732,300	M	2	5090	M	1	DCD
EXCV	EP-01-097	790,825	1,732,425	M	2	5085	M	1	DCD
EXCV	EP-01-098	790,500	1,732,500	M	2	5038	M	1	DCD
EXCV	EP-01-099	790,300	1,732,575	M	2	5020	M	1	DCD
EXCV	EP-01-100	790,050	1,732,750	M	2	5010	M	1	DCD
EXCV	EP-01-101	790,200	1,732,500	M	2	5022	M	1	DCD
EXCV	EP-01-102	790,100	1,732,500	M	2	5013	M	1	DCD
EXCV	EP-01-103	789,850	1,732,900	M	2	5009	M	1	DCD
EXCV	EP-01-104	789,850	1,732,750	M	2	5005	M	1	DCD
EXCV	EP-01-105	789,700	1,732,500	M	2	5020	M	1	DCD
EXCV	EP-01-106	789,375	1,732,525	M	2	5025	M	1	DCD

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
EXCV	EP-01-107	789,400	1,732,625	M	2	5008	M	1	DCD
EXCV	EP-01-108	789,400	1,732,700	M	2	5000	M	1	DCD
EXCV	EP-01-109	789,550	1,732,850	M	2	4987	M	1	DCD
EXCV	EP-01-110	789,250	1,732,950	M	2	4983	M	1	DCD
EXCV	EP-01-111	789,025	1,733,100	M	2	4988	M	1	DCD
EXCV	EP-01-112	789,475	1,732,975	M	2	4993	M	1	DCD
EXCV	EP-01-113	789,650	1,733,000	M	2	4995	M	1	DCD
EXCV	EP-01-114	789,450	1,733,300	M	2	4986	M	1	DCD
EXCV	EP-01-115	789,475	1,733,400	M	2	4985	M	1	DCD
EXCV	EP-01-116	789,500	1,733,575	M	2	4985	M	1	DCD
EXCV	EP-01-117	789,475	1,733,850	M	2	4975	M	1	DCD
EXCV	EP-01-118	789,600	1,734,075	M	2	4970	M	1	DCD
EXCV	EP-01-119	789,750	1,734,400	M	2	4958	M	1	DCD
EXCV	EP-01-120	789,950	1,734,200	M	2	4959	M	1	DCD
EXCV	EP-01-121	790,350	1,734,350	M	2	4958	M	1	DCD
BORE	SB-01-001	792,433	1,728,465	S	0	5079	S	0	DCD
BORE	SB-01-002	792,166	1,729,037	S	0	5066	S	0	DCD
BORE	SB-01-003	791,633	1,728,990	S	0	5067	S	0	DCD
BORE	SB-01-004	791,362	1,728,219	S	0	5083	S	0	DCD
BORE	SB-01-005	789,959	1,729,524	S	0	5048	S	0	DCD
BORE	SB-01-006	790,190	1,732,668	S	0	5017	S	0	DCD
BORE	SB-01-007	789,245	1,732,749	S	0	4994	S	0	DCD
BORE	SB-01-008	789,493	1,733,152	S	0	4988	S	0	DCD
BORE	SB-26-001	799,300	1,768,735	M	2	4858	M	1	DCD
BORE	SB-26-002	799,710	1,768,975	M	2	4850	M	1	DCD
BORE	SB-26-003	799,885	1,768,520	M	2	4840	M	1	DCD
BORE	SB-26-004	799,440	1,768,935	M	2	4860	M	1	DCD
BORE	SB-26-005	799,270	1,767,170	M	2	4867	M	1	DCD
BORE	SB-26-006	799,700	1,767,475	M	2	4862	M	1	DCD
BORE	SB-26-007	799,890	1,767,190	M	2	4855	M	1	DCD
BORE	SB-26-008	800,485	1,767,830	M	2	4862	M	1	DCD
BORE	SB-26-009	800,620	1,767,890	M	2	4861	M	1	DCD
BORE	SB-26-010	800,890	1,767,955	M	2	4864	M	1	DCD
BORE	SB-26-011	800,970	1,767,790	M	2	4859	M	1	DCD
BORE	SB-26-012	801,040	1,767,655	M	2	4853	M	1	DCD
BORE	SB-26-013	801,575	1,768,250	M	2	4860	M	1	DCD

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
BORE	SB-28-014	800,980	1,767,245	M	2	4846	M	1	DCD
BORE	SB-28-015	800,510	1,767,050	M	2	4853	M	1	DCD
BORE	SB-28-001	798,060	1,763,590	M	1	4805	M	1	DCD
BORE	SB-28-002	798,000	1,763,500	M	1	4805	M	1	DCD
BORE	SB-28-003	797,890	1,763,460	M	1	4805	M	1	DCD
BORE	SB-28-004	797,960	1,763,500	M	1	4805	M	1	DCD
BORE	SB-28-005	797,890	1,763,500	M	1	4805	M	1	DCD
BORE	SB-28-006	797,250	1,763,520	M	1	4805	M	1	DCD
BORE	SB-28-007	797,185	1,763,550	M	1	4811	M	1	DCD
BORE	SB-28-008	797,110	1,763,650	M	1	4813	M	1	DCD
BORE	SB-28-009	797,045	1,763,770	M	1	4815	M	1	DCD
BORE	SB-28-010	797,020	1,763,820	M	1	4818	M	1	DCD
BORE	SB-28-011	797,690	1,763,450	M	1	4800	M	1	DCD
BORE	SB-28-012	797,610	1,763,420	M	1	4800	M	1	DCD
BORE	SB-28-013	797,520	1,763,350	M	1	4800	M	1	DCD
BORE	SB-28-014	797,445	1,763,300	M	1	4800	M	1	DCD
BORE	SB-28-015	797,355	1,763,170	M	1	4800	M	1	DCD
BORE	SB-28-016	797,300	1,763,130	M	1	4800	M	1	DCD
BORE	SB-28-017	797,190	1,763,080	M	1	4800	M	1	DCD
BORE	SB-28-018	797,070	1,763,015	M	1	4800	M	1	DCD
BORE	SB-28-019	797,065	1,763,955	M	1	4800	M	1	DCD
BORE	SB-28-020	797,455	1,763,180	M	1	4800	M	1	DCD
BORE	SB-28-021	796,910	1,763,125	M	1	4805	M	1	DCD
BORE	SB-28-022	796,935	1,762,865	M	1	4800	M	1	DCD
BORE	SB-28-023	796,925	1,763,020	M	1	4800	M	1	DCD
BORE	SB-28-024	796,830	1,763,960	M	1	4805	M	1	DCD
BORE	SB-28-025	797,380	1,763,110	M	1	4800	M	1	DCD
BORE	SB-28-026	796,830	1,763,970	M	1	4800	M	1	DCD
BORE	SB-28-027	796,775	1,763,990	M	1	4805	M	1	DCD
BORE	SB-28-028	797,310	1,763,945	M	1	4820	M	1	DCD
BORE	SB-28-029	797,000	1,763,630	M	1	4811	M	1	DCD
BORE	SB-28-030	796,600	1,763,890	M	1	4785	M	1	DCD
BORE	SB-28-031	796,750	1,762,770	M	1	4795	M	1	DCD
BORE	SB-28-032	796,890	1,762,720	M	1	4795	M	1	DCD
BORE	SB-28-033	797,070	1,762,840	M	1	4795	M	1	DCD
BORE	SB-28-034	797,250	1,762,950	M	1	4795	M	1	DCD



Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
BORE	SB-28-035	797,420	1,763,070	M	1	4795	M	1	DCD
BORE	SB-28-036	797,610	1,763,190	M	1	4795	M	1	DCD
BORE	SB-28-037	797,770	1,763,330	M	1	4800	M	1	DCD
BORE	SB-42-001	794,776	1,765,201	M	2	4872	M	1	DCD
BORE	SB-42-002	794,760	1,765,190	M	2	4872	M	1	DCD
BORE	SB-42-003	794,771	1,765,192	M	2	4872	M	1	DCD
BORE	SB-42-004	794,741	1,765,178	M	2	4872	M	1	DCD
BORE	SB-42-005	794,607	1,765,091	M	2	4872	M	1	DCD
BORE	SB-42-006	794,673	1,764,949	M	2	4870	M	1	DCD
BORE	SB-42-007	794,681	1,764,935	M	2	4865	M	1	DCD
BORE	SB-42-008	794,807	1,764,800	M	2	4862	M	1	DCD
BORE	SB-42-009	794,930	1,764,711	M	2	4857	M	1	DCD
BORE	SB-42-010	794,961	1,764,638	M	2	4854	M	1	DCD
BORE	SB-42-011	794,966	1,764,566	M	2	4850	M	1	DCD
BORE	SB-42-012	794,998	1,764,574	M	2	4850	M	1	DCD
BORE	SB-42-013	796,003	1,764,578	M	2	4850	M	1	DCD
BORE	SB-46-001	796,170	1,763,258	S	0	4799	M	0	DCD
BORE	SB-46-001	804,025	1,767,050	M	2	4800	M	1	DCD
BORE	SB-46-002	804,050	1,767,200	M	2	4800	M	1	DCD
BORE	SB-46-003	799,625	1,765,650	M	2	4820	M	1	DCD
BORE	SB-46-004	799,700	1,765,850	M	2	4820	M	1	DCD
BORE	SB-46-005	800,150	1,765,900	M	2	4820	M	1	DCD
BORE	SB-46-006	799,450	1,764,405	M	2	4800	M	1	DCD
BORE	SB-46-007	799,450	1,764,400	M	2	4800	M	1	DCD
BORE	SB-46-008	798,925	1,763,990	M	2	4795	M	1	DCD
BORE	SB-46-009	799,350	1,764,200	M	2	4795	M	1	DCD
BORE	SB-46-010	798,450	1,764,125	M	2	4810	M	1	DCD
BORE	SB-46-011	798,450	1,764,135	M	2	4810	M	1	DCD
BORE	SB-46-012	798,425	1,765,150	M	2	4828	M	1	DCD
BORE	SB-46-013	796,400	1,765,175	M	2	4828	M	1	DCD
BORE	SB-46-014	796,200	1,765,150	M	2	4828	M	1	DCD
BORE	SB-46-015	796,250	1,765,125	M	2	4828	M	1	DCD
BORE	SB-46-016	792,250	1,764,650	M	2	4890	M	1	DCD
BORE	SB-46-017	793,250	1,764,910	M	2	4880	M	1	DCD
BORE	SB-46-018	793,250	1,764,835	M	2	4890	M	1	DCD
BORE	SB-BK-001	794,700	1,733,325	M	2	4999.00	M	1	DCD

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
BORE	SB-BK-002	796,100	1,739,126	M	2	4780.00	M	1	DCD
BORE	SB-BK-003	796,800	1,764,926	M	2	4856.00	M	1	DCD
BORE	SB-BK-004	789,576	1,731,526	M	2	4999.00	M	1	DCD
BORE	SB-BK-005	798,500	1,757,200	M	2	4689.00	M	1	DCD
BORE	SB-BK-006	787,501	1,727,024	S	0	5126	S	0	DCD
LAGO	SD-14-001	800,092	1,760,500	M	2	4691	M	1	DCD
LAGO	SD-14-002	800,246	1,760,300	M	2	4684	M	1	DCD
LAGO	SD-14-003	799,819	1,759,636	M	1	4682	M	1	DCD
LAGO	SD-14-004	799,780	1,759,800	M	2	4690	M	1	DCD
LAGO	SD-45-001	796,120	1,763,290	M	1	4799	M	1	DCD
LAGO	SD-45-002	796,149	1,763,263	M	1	4799	M	1	DCD
LAGO	SD-45-003	796,159	1,763,243	M	1	4799	M	1	DCD
LAGO	SD-45-004	796,210	1,763,278	M	1	4799	M	1	DCD
LAGO	SD-45-005	796,165	1,763,261	M	1	4799	M	1	DCD
SUMP	SD-47-001	799,550	1,764,250	M	2	4796	M	1	DCD
SUMP	SD-47-002	799,150	1,764,200	M	2	4795	M	1	DCD
SURF	SS-01-001	791,450	1,727,000	M	2	5110	M	1	DCD
SURF	SS-01-002	790,300	1,729,150	M	2	5048	M	1	DCD
SURF	SS-01-003	788,990	1,730,925	M	2	5020	M	1	DCD
SURF	SS-01-004	788,200	1,732,225	M	2	4990	M	1	DCD
SURF	SS-01-005	787,575	1,732,425	M	2	5090	M	1	DCD
SURF	SS-01-006	789,175	1,733,375	M	2	4980	M	1	DCD
SURF	SS-01-007	789,800	1,734,850	M	2	4955	M	1	DCD
SURF	SS-01-008	788,925	1,735,700	M	2	4950	M	1	DCD
SURF	SS-04-001	798,910	1,763,880	M	2	4794	M	1	DCD
SURF	SS-04-002	798,890	1,763,870	M	2	4794	M	1	DCD
SURF	SS-04-003	798,780	1,764,700	M	2	4800	M	1	DCD
SURF	SS-04-004	798,750	1,764,690	M	2	4800	M	1	DCD
SURF	SS-04-005	798,990	1,764,935	M	2	4802	M	1	DCD
SURF	SS-04-006	799,000	1,764,915	M	2	4802	M	1	DCD
SURF	SS-19-001	792,793	1,733,992	M	2	5010	M	1	DCD
SURF	SS-19-002	792,792	1,733,995	M	2	5010	M	1	DCD
SURF	SS-19-003	792,849	1,733,944	M	2	5010	M	1	DCD
SURF	SS-19-004	792,731	1,733,869	M	2	5010	M	1	DCD
SURF	SS-19-005	792,762	1,733,865	M	2	5010	M	1	DCD
SURF	SS-19-006	792,305	1,733,906	M	2	5010	M	1	DCD

Geotech Map File

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
SURF	88-19-007	792,671	1,733,608	M	2	5010	M	1	DCD
SURF	88-19-008	792,866	1,733,399	M	2	5010	M	1	DCD
SURF	88-19-009	793,203	1,733,911	M	2	5010	M	1	DCD
SURF	88-19-010	792,794	1,733,745	M	2	5010	M	1	DCD
SURF	88-19-011	792,832	1,733,748	M	2	5010	M	1	DCD
SURF	88-19-012	792,846	1,733,772	M	2	5010	M	1	DCD
SURF	88-20-001	794,961	1,732,416	M	2	5005	M	1	DCD
SURF	88-20-002	795,017	1,732,396	M	2	5005	M	1	DCD
SURF	88-20-003	795,031	1,732,433	M	2	5003	M	1	DCD
SURF	88-20-004	794,996	1,732,483	M	2	5002	M	1	DCD
SURF	88-20-005	794,993	1,732,462	M	2	5003	M	1	DCD
SURF	88-20-006	795,020	1,732,485	M	2	5000	M	1	DCD
SURF	88-20-007	794,906	1,732,550	M	2	5000	M	1	DCD
SURF	88-20-008	794,855	1,732,488	M	2	5003	M	1	DCD
SURF	88-20-009	794,833	1,732,443	M	2	5005	M	1	DCD
SURF	88-20-010	794,862	1,732,385	M	2	5005	M	1	DCD
SURF	88-20-011	794,900	1,732,344	M	2	5008	M	1	DCD
SURF	88-20-012	794,980	1,732,327	M	2	5008	M	1	DCD
SURF	88-20-013	794,967	1,732,312	M	2	5009	M	1	DCD
SURF	88-20-014	795,027	1,732,373	M	2	5003	M	1	DCD
SURF	88-20-015	795,072	1,732,421	M	2	5000	M	1	DCD
SURF	88-20-016	795,061	1,732,480	M	2	5000	M	1	DCD
SURF	88-21-001	795,595	1,739,242	M	2	4785	M	1	DCD
SURF	88-21-002	795,566	1,739,255	M	2	4785	M	1	DCD
SURF	88-21-003	795,525	1,739,259	M	2	4785	M	1	DCD
SURF	88-21-004	795,485	1,739,258	M	2	4785	M	1	DCD
SURF	88-21-005	795,430	1,739,328	M	2	4785	M	1	DCD
SURF	88-21-006	795,445	1,739,222	M	2	4785	M	1	DCD
SURF	88-21-007	795,469	1,739,221	M	2	4785	M	1	DCD
SURF	88-21-008	795,510	1,739,221	M	2	4785	M	1	DCD
SURF	88-21-009	795,548	1,739,227	M	2	4785	M	1	DCD
SURF	88-21-010	795,562	1,739,185	M	2	4790	M	1	DCD
SURF	88-26-016	799,500	1,766,340	M	2	4840	M	1	DCD
SURF	88-26-017	799,510	1,766,525	M	2	4848	M	1	DCD
SURF	88-26-018	799,620	1,766,790	M	2	4854	M	1	DCD
SURF	88-26-019	799,890	1,766,850	M	2	4840	M	1	DCD

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
SURF	88-26-020	800,120	1,766,885	M	2	4840	M	1	DCD
SURF	88-26-021	800,040	1,766,885	M	2	4846	M	1	DCD
SURF	88-26-022	799,580	1,767,300	M	2	4862	M	1	DCD
SURF	88-26-023	799,860	1,767,525	M	2	4863	M	1	DCD
SURF	88-26-024	800,100	1,767,235	M	2	4860	M	1	DCD
SURF	88-26-025	800,190	1,767,060	M	2	4873	M	1	DCD
SURF	88-26-026	800,260	1,767,575	M	2	4863	M	1	DCD
SURF	88-26-027	800,300	1,767,470	M	2	4875	M	1	DCD
SURF	88-26-028	800,545	1,767,450	M	2	4860	M	1	DCD
SURF	88-26-029	800,600	1,767,590	M	2	4860	M	1	DCD
SURF	88-26-030	800,590	1,767,385	M	2	4876	M	1	DCD
SURF	88-26-031	801,600	1,767,515	M	2	4875	M	1	DCD
SURF	88-26-032	800,440	1,767,250	M	2	4875	M	1	DCD
SURF	88-26-033	801,300	1,767,835	M	2	4864	M	1	DCD
SURF	88-26-034	800,755	1,767,125	M	2	4846	M	1	DCD
SURF	88-26-035	801,180	1,767,400	M	2	4843	M	1	DCD
SURF	88-26-036	801,360	1,767,460	M	2	4843	M	1	DCD
SURF	88-26-037	801,710	1,767,600	M	2	4840	M	1	DCD
SURF	88-26-038	801,600	1,767,820	M	2	4847	M	1	DCD
SURF	88-26-039	801,730	1,767,900	M	2	4847	M	1	DCD
SURF	88-26-040	801,950	1,767,700	M	2	4840	M	1	DCD
SURF	88-26-041	801,345	1,768,080	M	2	4858	M	1	DCD
SURF	88-26-042	801,320	1,768,000	M	2	4860	M	1	DCD
SURF	88-26-043	801,465	1,768,370	M	2	4863	M	1	DCD
SURF	88-26-044	801,300	1,768,260	M	2	4865	M	1	DCD
SURF	88-26-045	801,020	1,768,170	M	2	4864	M	1	DCD
SURF	88-27-001	793,590	1,764,450	M	2	4868	M	1	DCD
SURF	88-27-002	793,637	1,764,465	M	2	4868	M	1	DCD
SURF	88-27-003	793,642	1,764,530	M	2	4868	M	1	DCD
SURF	88-27-004	793,604	1,764,560	M	2	4868	M	1	DCD
SURF	88-27-005	793,555	1,764,505	M	2	4868	M	1	DCD
SURF	88-27-006	793,515	1,764,495	M	2	4868	M	1	DCD
SURF	88-27-007	793,530	1,764,450	M	2	4868	M	1	DCD
SURF	88-28-001	796,400	1,763,390	M	2	4797	M	1	DCD
SURF	88-28-002	796,437	1,763,425	M	2	4797	M	1	DCD
SURF	88-28-003	796,320	1,763,645	M	2	4798	M	1	DCD

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
SURF	88-28-004	796,296	1,763,615	M	2	4800	M	1	DOD
SURF	88-28-005	796,370	1,763,615	M	2	4800	M	1	DOD
SURF	88-28-006	796,020	1,763,440	M	2	4800	M	1	DOD
SURF	88-28-007	796,130	1,763,360	M	2	4798	M	1	DOD
SURF	88-28-008	796,100	1,763,230	M	2	4797	M	1	DOD
SURF	88-34-001	792,963	1,764,742	M	2	4880	M	1	DOD
SURF	88-34-002	792,974	1,764,768	M	2	4880	M	1	DOD
SURF	88-34-003	792,962	1,764,785	M	2	4880	M	1	DOD
SURF	88-34-004	792,922	1,764,745	M	2	4880	M	1	DOD
SURF	88-34-005	792,925	1,764,732	M	2	4880	M	1	DOD
SURF	88-34-006	792,945	1,764,730	M	2	4880	M	1	DOD
SURF	88-37-001	793,066	1,738,293	M	2	4832	M	1	DOD
SURF	88-37-002	793,134	1,738,289	M	2	4830	M	1	DOD
SURF	88-37-003	793,221	1,738,329	M	2	4828	M	1	DOD
SURF	88-37-004	793,104	1,738,363	M	2	4826	M	1	DOD
SURF	88-37-005	793,226	1,738,418	M	2	4826	M	1	DOD
SURF	88-37-006	793,169	1,738,402	M	2	4826	M	1	DOD
SURF	88-37-007	793,188	1,738,474	M	2	4826	M	1	DOD
SURF	88-37-008	793,119	1,738,531	M	2	4824	M	1	DOD
SURF	88-37-009	793,127	1,738,432	M	2	4824	M	1	DOD
SURF	88-37-010	792,928	1,738,439	M	2	4830	M	1	DOD
SURF	88-37-011	793,010	1,738,368	M	2	4830	M	1	DOD
SURF	88-37-012	793,044	1,738,393	M	2	4830	M	1	DOD
SURF	88-38-001	800,247	1,762,660	M	2	4764	M	1	DOD
SURF	88-38-002	800,162	1,762,655	M	2	4764	M	1	DOD
SURF	88-38-003	800,175	1,762,685	M	2	4764	M	1	DOD
SURF	88-38-004	800,103	1,762,720	M	2	4764	M	1	DOD
SURF	88-42-001	794,576	1,765,438	M	2	4883	M	1	DOD
SURF	88-42-002	794,338	1,765,184	M	2	4880	M	1	DOD
SURF	88-42-003	794,600	1,765,091	M	2	4872	M	1	DOD
SURF	88-42-004	794,622	1,765,044	M	2	4872	M	1	DOD
SURF	88-42-005	794,551	1,764,960	M	2	4867	M	1	DOD
SURF	88-42-006	794,430	1,764,793	M	2	4862	M	1	DOD
SURF	88-42-007	794,375	1,764,737	M	2	4867	M	1	DOD
SURF	88-42-008	794,891	1,764,701	M	2	4857	M	1	DOD
SURF	88-46-001	804,025	1,767,050	M	2	4800	M	1	DOD

Site Type	Site ID	Y (North)	X (East)	X,Y Sources	X,Y Assoc Code	GIS Elevation	GIS Source	GIS Assoc Code	Int
SURF	SB-46-002	804,050	1,767,200	M	2	4800	M	1	DCD
SURF	SB-46-003	798,025	1,765,650	M	2	4800	M	1	DCD
SURF	SB-46-004	798,700	1,765,850	M	2	4800	M	1	DCD
SURF	SB-46-005	800,150	1,765,900	M	2	4800	M	1	DCD
SURF	SB-46-006	798,450	1,764,405	M	2	4800	M	1	DCD
SURF	SB-46-007	798,450	1,764,400	M	2	4800	M	1	DCD
SURF	SB-46-008	798,925	1,763,900	M	2	4795	M	1	DCD
SURF	SB-46-009	798,350	1,764,200	M	2	4795	M	1	DCD
SURF	SB-46-010	798,400	1,764,125	M	2	4810	M	1	DCD
SURF	SB-46-011	798,450	1,764,135	M	2	4810	M	1	DCD
SURF	SB-46-012	798,025	1,765,150	M	2	4828	M	1	DCD
SURF	SB-46-013	798,400	1,765,175	M	2	4828	M	1	DCD
SURF	SB-46-014	798,350	1,765,150	M	2	4828	M	1	DCD
SURF	SB-46-015	798,350	1,765,125	M	2	4828	M	1	DCD
SURF	SB-46-016	798,350	1,764,050	M	2	4800	M	1	DCD
SURF	SB-46-017	798,350	1,764,910	M	2	4800	M	1	DCD
SURF	SB-46-018	798,350	1,764,835	M	2	4800	M	1	DCD
LAGO	SW-14-001	800,002	1,760,500	M	2	4805	M	1	DCD
LAGO	SW-14-002	800,345	1,760,200	M	2	4805	M	1	DCD
LAGO	SW-45-001	795,140	1,763,253	M	1	4790	M	1	DCD
LAGO	SW-45-002	795,100	1,763,243	M	1	4790	M	1	DCD
LAGO	SW-45-003	795,105	1,763,281	M	1	4790	M	1	DCD
SUMP	SW-47-001	798,800	1,764,250	M	2	4791	M	1	DCD

SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-01-001	07/23/92	JM	0.0	0.0	DPTOT	01	101.5	FT	FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-001	07/23/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-001	07/23/92	JM	0.0	0.0-101.5	ADVAU	33	0.0		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-001	07/23/92	JM	0.0	6.0	USCS	01	0.0		FPM	SM
BORE	SB-01-001	07/23/92	JM	6.0	8.5	USCS	01	0.0		FPM	ML
BORE	SB-01-001	07/23/92	JM	14.5	5.5	USCS	01	0.0		FPM	CL
BORE	SB-01-001	07/23/92	JM	20.0	5.5	USCS	01	0.0		FPM	ML-CL
BORE	SB-01-001	07/23/92	JM	25.5	4.5	USCS	01	0.0		FPM	GM
BORE	SB-01-001	07/23/92	JM	30.0	5.0	USCS	01	0.0		FPM	SW-SM
BORE	SB-01-001	07/23/92	JM	35.0	5.0	USCS	01	0.0		FPM	GM
BORE	SB-01-001	07/23/92	JM	40.0	5.0	USCS	01	0.0		FPM	SM
BORE	SB-01-001	07/23/92	JM	45.0	17.0	USCS	01	0.0		FPM	GP-GM
BORE	SB-01-001	07/23/92	JM	62.0	8.0	USCS	01	0.0		FPM	ML
BORE	SB-01-001	07/23/92	JM	70.0	2.0	USCS	01	0.0		FPM	GP-GM
BORE	SB-01-001	07/23/92	JM	72.0	8.0	USCS	01	0.0		FPM	CL
BORE	SB-01-001	07/23/92	JM	80.0	10.0	USCS	01	0.0		FPM	GW-GM
BORE	SB-01-001	07/23/92	JM	90.0	11.5	USCS	01	0.0		FPM	GM

SITE/TYP	SITEID	STDATE	ORGLAB	DEPTT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-01-002	07/27/02	JM	0.0	0.0	DPTOT	01	101.5	FT	PPM	
SITE/TYP	SITEID	STDATE	ORGLAB	DEPTT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-002	07/27/02	JM	0.0	0.0	NOGWT	01	0.00		PPM	
SITE/TYP	SITEID	STDATE	ORGLAB	DEPTT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-002	07/27/02	JM	0.0	0.0-101.5	ADVAU	22	0.0		PPM	
SITE/TYP	SITEID	STDATE	ORGLAB	DEPTT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-002	07/27/02	JM	0.0	5.0	USCS	01	0.0		PPM	SM
BORE	SB-01-002	07/27/02	JM	5.0	10.0	USCS	01	0.0		PPM	GM
BORE	SB-01-002	07/27/02	JM	15.0	12.0	USCS	01	0.0		PPM	SM
BORE	SB-01-002	07/27/02	JM	27.0	30.0	USCS	01	0.0		PPM	ML
BORE	SB-01-002	07/27/02	JM	57.0	18.0	USCS	01	0.0		PPM	GM
BORE	SB-01-002	07/27/02	JM	75.0	22.0	USCS	01	0.0		PPM	ML
BORE	SB-01-002	07/27/02	JM	97.0	4.5	USCS	01	0.0		PPM	GW-QM



SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-01-003	7/26/92	JM	0.0	0.0	DPTOT	01	101.6	FT	FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-003	7/26/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-003	7/26/92	JM	0.0	0.0-101.5	ADVAU	32	0.0		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-003	7/26/92	JM	0.0	5.0	USCS	01	0.0		FPM	ML
BORE	SB-01-003	7/26/92	JM	5.0	6.0	USCS	01	0.0		FPM	CL
BORE	SB-01-003	7/26/92	JM	11.0	28.5	USCS	01	0.0		FPM	ML
BORE	SB-01-003	7/26/92	JM	34.5	0.5	USCS	01	0.0		FPM	GM
BORE	SB-01-003	7/26/92	JM	35.0	6.0	USCS	01	0.0		FPM	ML
BORE	SB-01-003	7/26/92	JM	40.0	6.0	USCS	01	0.0		FPM	GM
BORE	SB-01-003	7/26/92	JM	45.0	1.0	USCS	01	0.0		FPM	ML
BORE	SB-01-003	7/26/92	JM	46.0	22.0	USCS	01	0.0		FPM	GM
BORE	SB-01-003	7/26/92	JM	68.0	5.0	USCS	01	0.0		FPM	CL
BORE	SB-01-003	7/26/92	JM	73.0	17.0	USCS	01	0.0		FPM	GW-GM
BORE	SB-01-003	7/26/92	JM	90.0	11.5	USCS	01	0.0		FPM	GW

SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-01-004	07/25/92	JM	0.0	0.0	DPTOT	01	101.5	FT	FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-004	07/25/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-004	07/25/92	JM	0.0	0.0-101.5	ADVAU	32	0.0		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-004	07/25/92	JM	0.0		USCS	01	0.0		FPM	ML
BORE	SB-01-004	07/25/92	JM	28.5	10.0	USCS	01	0.0		FPM	GM
BORE	SB-01-004	07/25/92	JM	38.5	2.5	USCS	01	0.0		FPM	ML
BORE	SB-01-004	07/25/92	JM	41.0	1.5	USCS	01	0.0		FPM	ML-CL
BORE	SB-01-004	07/25/92	JM	42.5	7.5	USCS	01	0.0		FPM	GW-GM
BORE	SB-01-004	07/25/92	JM	50.0	38.0	USCS	01	0.0		FPM	GM
BORE	SB-01-004	07/25/92	JM	88.0	2.5	USCS	01	0.0		FPM	CL
BORE	SB-01-004	07/25/92	JM	90.5	10.0	USCS	01	0.0		FPM	GM
BORE	SB-01-004	07/25/92	JM	100.5	1.0	USCS	01	0.0		FPM	CL

SITEID	SITEID	STDATE	ORGLAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-01-005	07/25/92	JM	0.0	0.0	DPTOT	01	101.5	FT	FPM	
SITEID	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-005	07/25/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	
SITEID	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-005	07/25/92	JM	0.0	0.0-101.5	ADVAU	32	0.0		FPM	
SITEID	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-005	07/25/92	JM	0.0	5.0	USCS	01	0.0		FPM	GM
BORE	SB-01-005	07/25/92	JM	5.0	5.0	USCS	01	0.0		FPM	CL
BORE	SB-01-005	07/25/92	JM	10.0	5.5	USCS	01	0.0		FPM	SM
BORE	SB-01-005	07/25/92	JM	15.5	2.5	USCS	01	0.0		FPM	GM
BORE	SB-01-005	07/25/92	JM	18.0	2.0	USCS	01	0.0		FPM	ML
BORE	SB-01-005	07/25/92	JM	20.0	3.0	USCS	01	0.0		FPM	CL
BORE	SB-01-005	07/25/92	JM	23.0	11.0	USCS	01	0.0		FPM	ML
BORE	SB-01-005	07/25/92	JM	34.0	24.0	USCS	01	0.0		FPM	GM
BORE	SB-01-005	07/25/92	JM	58.0	27.0	USCS	01	0.0		FPM	GW-GM
BORE	SB-01-005	07/25/92	JM	85.0	3.0	USCS	01	0.0		FPM	GM
BORE	SB-01-005	07/25/92	JM	88.0	0.5	USCS	01	0.0		FPM	CL
BORE	SB-01-005	07/25/92	JM	88.5	1.5	USCS	01	0.0		FPM	GM
BORE	SB-01-005	07/25/92	JM	90.0	11.5	USCS	01	0.0		FPM	GW-GM

SITETYP	SITID	STDATE	ORGLAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-01-006	07/30/92	JM	0.0	0.0	DPTOT	01	101.6	FT	FPM	
SITETYP	SITID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-006	07/30/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	
SITETYP	SITID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-006	07/30/92	JM	0.0	0.0-101.6	ADVAU	32	0.0		FPM	
SITETYP	SITID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-006	07/30/92	JM	0.0	13.0	USCS	01	0.0		FPM	SM
BORE	SB-01-006	07/30/92	JM	13.0	5.5	USCS	01	0.0		FPM	CL
BORE	SB-01-006	07/30/92	JM	18.5	5.5	USCS	01	0.0		FPM	ML
BORE	SB-01-006	07/30/92	JM	24.0	4.5	USCS	01	0.0		FPM	SM
BORE	SB-01-006	07/30/92	JM	28.5	15.0	USCS	01	0.0		FPM	ML
BORE	SB-01-006	07/30/92	JM	43.5	11.5	USCS	01	0.0		FPM	CL
BORE	SB-01-006	07/30/92	JM	55.0	6.5	USCS	01	0.0		FPM	ML
BORE	SB-01-006	07/30/92	JM	61.5	3.5	USCS	01	0.0		FPM	CL
BORE	SB-01-006	07/30/92	JM	65.0	4.0	USCS	01	0.0		FPM	ML
BORE	SB-01-006	07/30/92	JM	69.0	2.0	USCS	01	0.0		FPM	GP-GM
BORE	SB-01-006	07/30/92	JM	71.0	4.0	USCS	01	0.0		FPM	CL
BORE	SB-01-006	07/30/92	JM	75.0	1.0	USCS	01	0.0		FPM	GP-GC
BORE	SB-01-006	07/30/92	JM	76.0	17.0	USCS	01	0.0		FPM	CH
BORE	SB-01-006	07/30/92	JM	93.0	7.0	USCS	01	0.0		FPM	ML
BORE	SB-01-006	07/30/92	JM	100.0	1.5	USCS	01	0.0		FPM	GP-GM

S	SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
	BORE	SB-01-007	07/28/92	JM	0.0	0.0	DPTOT	01	101.5	FT	FPM	
	SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
	BORE	SB-01-007	07/28/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	
	SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
	BORE	SB-01-007	07/28/92	JM	0.0	0.0-101.5	ADVAU	32	0.0		FPM	
	SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
	BORE	SB-01-007	07/28/92	JM	0.0	0.0	USCS	01	0.0		FPM	ML
	BORE	SB-01-007	07/28/92	JM	36.0	4.5	USCS	01	0.0		FPM	CL
	BORE	SB-01-007	07/28/92	JM	40.5	2.5	USCS	01	0.0		FPM	ML
	BORE	SB-01-007	07/28/92	JM	43.0	17.0	USCS	01	0.0		FPM	GM
	BORE	SB-01-007	07/28/92	JM	60.0	1.5	USCS	01	0.0		FPM	GM-GC
	BORE	SB-01-007	07/28/92	JM	61.5	6.5	USCS	01	0.0		FPM	GC
	BORE	SB-01-007	07/28/92	JM	68.0	12.0	USCS	01	0.0		FPM	GW-GM
	BORE	SB-01-007	07/28/92	JM	80.0	21.5	USCS	01	0.0		FPM	GM

SITE/TYP	SITEID	STDATE	ORGLAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-01-008	07/28/92	JM	0.0	0.0	DPTOT	01	101.5	FT	PPM	
SITE/TYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-008	07/28/92	JM	0.0	0.0	NOGWT	01	0.00		PPM	
SITE/TYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-008	07/28/92	JM	0.0	0.0-101.5	ADVAU	32	0.0		PPM	
SITE/TYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-008	07/28/92	JM	0.0	13.0	USCS	01	0.0		PPM	ML
BORE	SB-01-008	07/28/92	JM	13.0	9.5	USCS	01	0.0		PPM	SM
BORE	SB-01-008	07/28/92	JM	22.5	31	USCS	01	0.0		PPM	ML
BORE	SB-01-008	07/28/92	JM	53.5	4.5	USCS	01	0.0		PPM	CL
BORE	SB-01-008	07/28/92	JM	53.0	9.0	USCS	01	0.0		PPM	ML
BORE	SB-01-008	07/28/92	JM	67.0	28.0	USCS	01	0.0		PPM	GW-GM
BORE	SB-01-008	07/28/92	JM	95.0	5.0	USCS	01	0.0		PPM	GM-GC
BORE	SB-01-008	07/28/92	JM	100.0	1.5	USCS	01	0.0		PPM	CL

SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-45-001	06/25/92	JM	0.0	0.0	DPTOT	01	101.5	FT	FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-45-001	06/25/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-45-001	06/25/92	JM	0.0	0.0-25.0	ADVAU	02	0.0		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-45-001	06/25/92	JM	0.0	2.0	USCS	01	0.0		FPM	ML
BORE	SB-45-001	06/25/92	JM	2.0	3.0	USCS	01	0.0		FPM	GM
BORE	SB-45-001	06/25/92	JM	5.0	4.0	USCS	01	0.0		FPM	ML
BORE	SB-45-001	06/25/92	JM	9.0	2.0	USCS	01	0.0		FPM	CL
BORE	SB-45-001	06/25/92	JM	11.0	6.5	USCS	01	0.0		FPM	ML
BORE	SB-45-001	06/25/92	JM	17.5	0.5	USCS	01	0.0		FPM	CL
BORE	SB-45-001	06/25/92	JM	18.3	2.2	USCS	01	0.0		FPM	ML
BORE	SB-45-001	06/25/92	JM	20.5	2.5	USCS	01	0.0		FPM	SM
BORE	SB-45-001	06/25/92	JM	23.0	2.0	USCS	01	0.0		FPM	CL

SITETYP	SITEID	STDATE	ORG LAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-BK-006	07/22/92	JM	0.0	0.0	DPTOT	01	101.5	FT	FPM	
SITETYP	SITEID	STDATE	ORG LAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-BK-006	07/22/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	
SITETYP	SITEID	STDATE	ORG LAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-BK-006	07/22/92	JM	0.0	0.0-101.5	ADVAU	33	0.0		FPM	
SITETYP	SITEID	STDATE	ORG LAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-BK-006	07/22/92	JM	0.0	5.0	USCS	01	0.0		FPM	GM
BORE	SB-BK-006	07/22/92	JM	5.0	5.0	USCS	01	0.0		FPM	GW
BORE	SB-BK-006	07/22/92	JM	10.0	5.0	USCS	01	0.0		FPM	GP-GM
BORE	SB-BK-006	07/22/92	JM	15.0	2.0	USCS	01	0.0		FPM	ML
BORE	SB-BK-006	07/22/92	JM	17.0	8.0	USCS	01	0.0		FPM	GW-GM
BORE	SB-BK-006	07/22/92	JM	25.0	5.0	USCS	01	0.0		FPM	GP-GM
BORE	SB-BK-006	07/22/92	JM	30.0	1.0	USCS	01	0.0		FPM	CL-CH
BORE	SB-BK-006	07/22/92	JM	31.0	4.0	USCS	01	0.0		FPM	GM
BORE	SB-BK-006	07/22/92	JM	35.0	10.0	USCS	01	0.0		FPM	GC
BORE	SB-BK-006	07/22/92	JM	45.0	5.0	USCS	01	0.0		FPM	GP-GM
BORE	SB-BK-006	07/22/92	JM	50.0	5.0	USCS	01	0.0		FPM	GW-GC
BORE	SB-BK-006	07/22/92	JM	55.0	5.0	USCS	01	0.0		FPM	ML-CL
BORE	SB-BK-006	07/22/92	JM	60.0	5.0	USCS	01	0.0		FPM	CL-CH
BORE	SB-BK-006	07/22/92	JM	65.0	5.5	USCS	01	0.0		FPM	CL
BORE	SB-BK-006	07/22/92	JM	70.5	4.5	USCS	01	0.0		FPM	GC
BORE	SB-BK-006	07/22/92	JM	75.0	25.0	USCS	01	0.0		FPM	GW
BORE	SB-BK-006	07/22/92	JM	100.0	1.5	USCS	01	0.0		FPM	GP-GC



## DATA ENTRY FORM FOR THE GEOTECHNICAL MAP FILE (GMA)

**Person completing form:**

**INSTALLATION: TN (Tooele Army Depot, North Area)**

**Date:**

**NOTE : All sample locations MUST have X, Y coordinates and GS elevation**

[illegible]

• Codes : X, Y Source - S= Surveyed, or by using surveyed reference points M= Estimated from a USGS map  
(or other reliable site map)  
X,Y Accuracy - 0 = 1 meter, 1 = 10 meters, 2 = 100 meters  
GS Elev. Source- S= Surveyed, or by using surveyed reference points M= Estimated from a USGS map  
(or other reliable site map)  
GS Accuracy - 0 = 1 ft, 1=10 ft, 8 = 0.1 ft

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## Appendix I



**MONTGOMERY WATSON**

## **APPENDIX I**

### **USATHAMA SOURCE WATER AND BENTONITE APPROVALS, AND TEAD-N EXCAVATION AND WASH WATER DISCHARGE PERMITS**

**I.O.O.1. Appendix I presents the documentation obtained by JMM project personnel preparatory to the commencement of field activities at TEAD-N. This documentation consists of :**

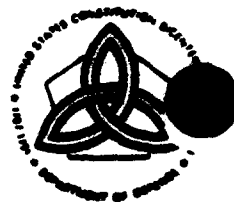
- **A completed Bentonite Approval Request Form, submitted to USATHAMA and approved as per Section 4.3.4. of the project Data Collection Quality Assurance Plan (DCQAP) (JMM, 1992b), authorizing the use of the intended type(s) of well-sealing material (Page J-2)**
- **A completed Water Approval Request Form, which was submitted and approved as per section 4.1.2 of the DCQAP, allowing the utilization of water from base supply well No. 3 (WW-3) for project use, including decontamination activities (Page J-5)**
- **A copy of the Excavation Permit issued to JMM by the TEAD-N Depot Facilities Division. Due to the presence of buried utilities at the various SWMUs, this permit was required by TEAD N for the subsurface investigations (soil borings and excavation test pits) which were conducted (Page J-7)**
- **A copy of the Discharge Permit issued by the TEAD-N Environmental Management Office which was required for the discharge of rinsate collected during decontamination activities. This rinsate was discharged to the TEAD N industrial wastewater treatment plant (IWTP) (Page J-17).**



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
US ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY  
ABERDEEN PROVING GROUND, MARYLAND 21010-5401

June 26, 1992



Installation Restoration Division

Mr. David Shank  
James M. Montgomery Consulting Engineers  
4525 S. Wasatch Boulevard  
Suite 200  
Salt Lake City, Utah 84124

Dear Mr. Shank:

This Agency has reviewed the two types of bentonite which you submitted for review for use at Tooele Army Depot-North Area. Both bentonites have been approved and the signed "Bentonite Approval Request" forms are enclosed.

As verbally requested, it is acceptable to this Agency to grout all the deep borings and the 25 ft. boring at Solid Waste Management Unit 45.

Point of contact for this Agency is the undersigned at  
(410) 671-1523/3240.

Sincerely

Mary Ellen Heppner  
Contracting Officer's  
Representative

Enclosure

Copy Furnished (without enclosure):

Commander, U.S. Army Chemical Research, Development and  
Engineering Center, Attention: SMCCR-PCB (Mr. Steve Bryant),  
Aberdeen Proving Ground, Maryland 21010-5401

RECEIVED

JUL 1 1992

JAMES M. MONTGOMERY

## BENTONITE APPROVAL REQUEST

### Army Installation for Intended Use:

1. Bentonite Brand Name: Well Plug
2. Bentonite Manufacturer: Black Hills Bentonite Company
3. Manufacturer's Address and Telephone Number: P.O. Box 9, Mills, WY 82644  
(307) 265-3740
4. Product description (from package label or attached brochure): Granular Well Plug 3/8" to 3/4"
5. Intended Use: Backfill shallow boreholes (i.e. less than 25 feet deep)

### SUBMITTED BY:

Company: James M. Montgomery Consulting Engineers

Person: David L. Shank Jr.

Telephone: (801) 272-1900

Date: 6-2-92

### USATHAMA APPROVAL/DISAPPROVAL:

(check one)

Project Officer/Date: *Ally Allen / 4 JUN 92* (A) D

Project Geologist/Date: *Harry Woods 15 June 92* (A) D

*MSDS Attached*

PROJECT NO. 2942.0129



TEAD-N PHASE I RFI  
BENTONITE APPROVAL REQUEST FORM

## BENTONITE APPROVAL REQUEST

### Army Installation for Intended Use:

1. Bentonite Brand Name: Fluid Drill Mud 1
2. Bentonite Manufacturer: M-1 Drilling Fluids Company
3. Manufacturer's Address and Telephone Number: P.O. Box 42842, Houston, TX 77242  
(713) 561-1507
4. Product description (from package label or attached brochure): Drilling fluid compound
5. Intended Use: Bentonite—Cement grout additive for backfill in deep boreholes  
(i.e. 25 feet deep or greater)

### SUBMITTED BY:

Company: James M. Montgomery Consulting Engineers

Person: David L. Shank Jr.

Telephone: (801) 272-1900

Date: 6-2-92

### USATHAMA APPROVAL/DISAPPROVAL:

(check one)

Project Officer/Date: *Harry E. Huppin* / 4 JUN 92 ☒ A ☐ D

Project Geologist/Date: *Harry Woods* 15 June '92 ☒ A ☐ D

**MSDS Attached**

**JMM**



**TEAD-N PHASE I RFI  
BENTONITE APPROVAL REQUEST FORM**



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
US ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY  
ABERDEEN PROVING GROUND, MARYLAND 21010-5401



June 26, 1992

Installation Restoration Division

Mr. David Shank  
James M. Montgomery Consulting Engineers  
4525 S. Wasatch Boulevard  
Suite 200  
Salt Lake City, Utah 84124

Dear Mr. Shank:

This Agency has reviewed the chemical analyses submitted for well WW-3 at Tooele Army Depot - North Area and finds the water acceptable for use as "USATHAMA-Approved Water" for your field program. A copy of the signed approval form is enclosed.

This water source will remain approved for six months from the date of analysis (i.e., November 6, 1992). If you need to utilize this water source beyond that date, the well will need to be resampled.

Point of contact for this Agency is the undersigned at (410) 671-1523.

Sincerely,

Mary Ellen Heppner  
Contracting Officer's  
Representative

Enclosure

Copy Furnished (without enclosure):

Commander, U.S. Army Chemical Research, Development and  
Engineering Center, Attention: SMCCR-PCB (Mr. Steve Bryant),  
Aberdeen Proving Ground, Maryland 21010-5423

RECEIVED

JUL 1 1992

JAMES M. MONTGOMERY

## WATER APPROVAL REQUEST FORM

### ARMY INSTALLATION FOR INTENDED USE:

1. Water source: WW-3  
Owner: U.S. Army  
Address: Tooele Army Depot, Utah  
Telephone number: (801) 833-3386
2. Water tap location:  
Operator: Directorate of Installation Operation Utilities  
Branch Chief, Tom Ware  
Address: Tooele Army Depot  
T3S, R4W, Sec 31  
Application No. 15 377
3. Type of source:  
Aquifer: Sand and gravel  
Well Depth: 700 feet  
Static water level from ground surface: 355 feet  
Date measured: Not available
4. Type of treatment prior to tap: None
5. Type of access: 2-inch spigot
6. Cost per gallon charged by owner/operator: No charge
7. Attach results and dates of chemical analyses for past two years. Include name(s) address(s) of analytical laboratory(s).  
See attached
8. Attach results and dates of duplicate chemical analyses for project analytes by the laboratory certified by, or in the process of being certified by, USATHAMA for these analytes.  
See attached

### SUBMITTED BY:

Company: James M. Montgomery, Consulting Engineers, Inc.  
Period: May 6, 1992 to May 6, 1993  
Telephone number: (801) 272-1900  
Date: June 2, 1992

### USATHAMA APPROVAL (A)/DISAPPROVAL (D):

(Check one)

Project officer: *Mr. Ellen Hym*  
Project geologist/date:  
Project chemist/date: *D Scarborough 6/8/92*

☒ A D  
☐ A D  
☐ A D



EXCAVATION PERMIT  
(Proponent Agency is Depot Facilities Division)  
(ZAD-R 420-16)

EXCAVATION REQUESTED BY ARMED SERVICES PHONE 233-3544  
LOCATION OF EXCAVATION See Attachments  
DATE OF EXCAVATION See Attached Schedule  
PURPOSE OF EXCAVATION Soil Sampling for the RDM-N RFE Phase I Study

NAME OF DIRECTOR TO NOTIFY THAT EXCAVATION IS TAKING PLACE IN OR NEAR A  
BUILDING OR FACILITY UNDER HIS RESPONSIBILITY  
for RODGER G. OLSON, Director of Instl Ops G.D. Webster  
DATE DIRECTOR WAS NOTIFIED \_\_\_\_\_

-NOTIFICATION SHALL BE MADE 24 HOURS IN ADVANCE-

BASED UPON DRAWINGS AVAILABLE AND PERSONAL KNOWLEDGE THE AREA FOR WHICH  
I AM RESPONSIBLE IS FREE OF UNDERGROUND FACILITIES OR SYSTEMS EXCEPT AS  
NOTED:

	SIGNATURE	COMMENTS
<u>W.D.G.S.</u> ELECTRICAL	<u>Thomas [Signature]</u>	
* MECHANICAL	<u>Thomas [Signature]</u>	
SANITATION	<u>Thomas [Signature]</u>	
ROADS & GROUNDS	<u>Cheryl [Signature]</u>	
FACILITIES BRANCH CHIEF	<u>Gerald [Signature]</u>	3711
CHIEF, FACILITIES ENGINEERING DIVISION	<u>Orin A. Howell</u> <u>Gerald D. Webster</u>	
COMMUNICATIONS CONTRACTOR	<u>Charles [Signature]</u>	
COAXIAL CABLE MANAGER	<u>[Signature]</u>	<u>* MUST call 24 hrs Prior to Dig</u>

NOTE: THIS PERMIT IS TO BE COMPLETED AND ATTACHED TO THE WORK ORDER  
PRIOR TO THE WORK ORDER BEING ISSUED.

\*\*EXCAVATOR MUST HAVE A VALID PERMIT IN HIS POSSESSION BEFORE AND  
DURING EXCAVATION\*\*

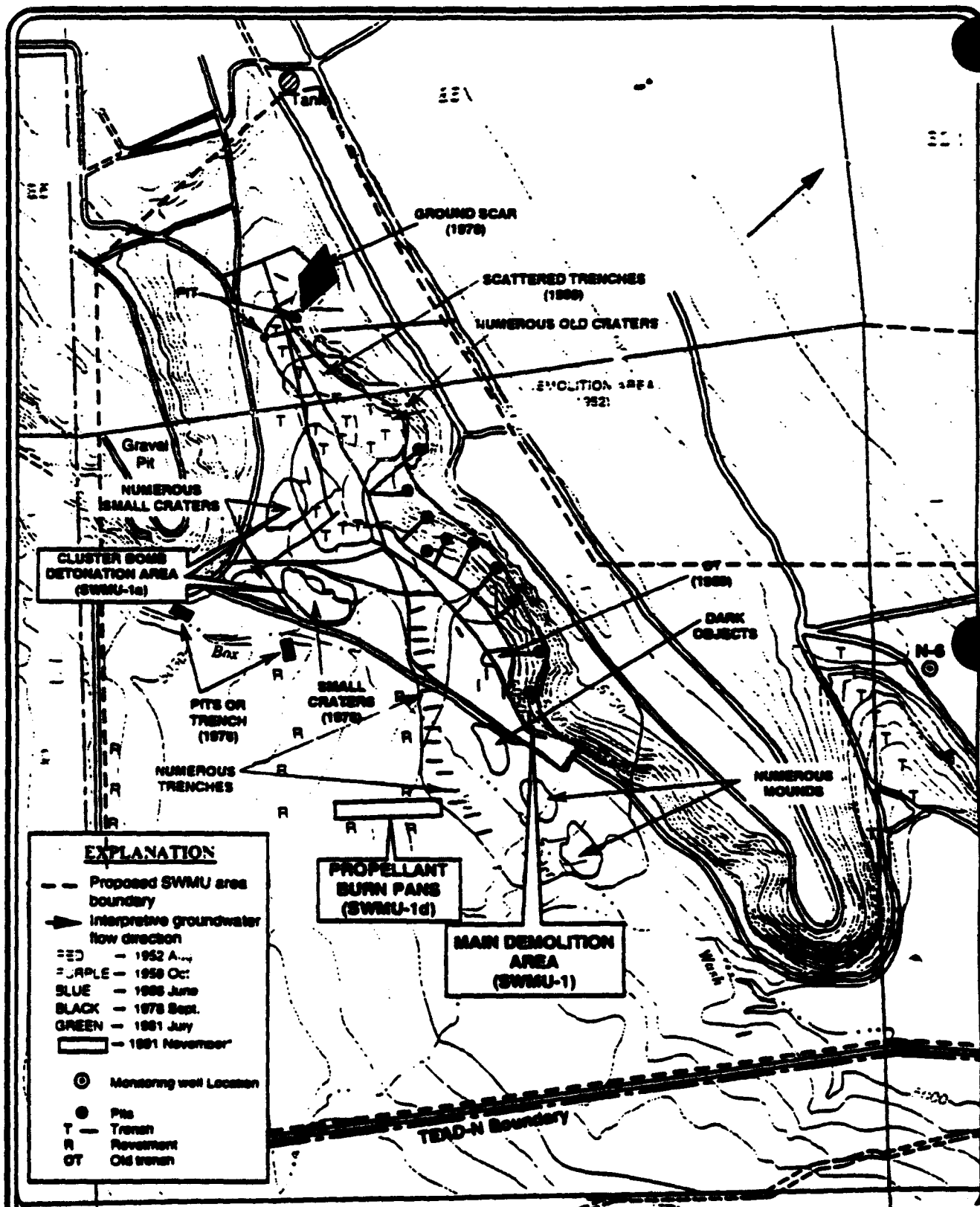
\* WATER & sewer lines, Throughout Digging Area

**USATHAMA/TEAD-N Phase I RFI  
Field Schedule - Team A**

<b>SWMU Number</b>	<b>Description</b>	<b>Start Date</b>	<b>End Date</b>	<b>Duration (days)</b>	<b>Activity</b>
1	Main Demolition Area	5-26	6-4	10	Conduct survey, construct decon pad, begin test pit excavation
		6-9	6-18	10	Continue test pit excavations
		7-21	7-24	4	Drill and sample deep soil borings
1a	Cluster Bomb Area	6-23	6-28	6	Dig and sample test pits
		7-25	7-26	2	Drill and sample deep soil borings
1a	Burn Pans	6-29	6-30	2	Dig and sample test pits
		7-27	7-28	2	Drill and sample deep soil boring
1b	Propellant Burn Pad	7-1	7-3	3	Dig and sample test pits
		7-29	7-30	2	Drill and sample deep soil borings
1c	Trash Burn Pits	5-26	5-26	1	Survey geophysical control points
		6-23	7-2	10	Conduct geophysical surveys
		7-7	7-9	3	Conduct geophysical surveys
		7-7	7-15	9	Dig and sample test pits
		8-4	8-6	3	Drill and sample deep soil borings
		8-7	8-8	2	Drill and sample deep soil boring
	Background Soil	8-7	8-8	2	Drill and sample deep soil boring
	Box Elder Wash	8-9	8-10	2	Collect surface soil samples

**USATHAMA/TEAD-N Phase I RFI  
Field Schedule - Team B**

<b>SWMU Number</b>	<b>Description</b>	<b>Start Date</b>	<b>End Date</b>	<b>Duration (days)</b>	<b>Activity</b>
NA	Ground Water Levels	6-9	6-10	2	Measure ground water levels (round 1)
		12-10	12-11	2	Measure ground water levels (round 2)
29	Drum Storage Areas	6-11	6-17	7	Drill and sample shallow soil borings
42	Bomb Washout Building	6-18	6-19	2	Drill and sample shallow soil borings and collect surface soil samples
		6-23	6-24	2	Drill and sample shallow soil borings and collect surface soil samples
26	DRMO Storage Yard	6-25	6-30	6	Drill and sample shallow soil borings <i>= EE-ER JF MAY</i>
45	Stormwater Discharge Area	7-1	7-2	2	Collect surface water and sediment samples, drill and sample soil boring
28	90-Day Drum Storage Area	7-7	7-7	1	Collect surface soil samples
27	RCRA Container Storage Area	7-8	7-8	1	Collect surface soil samples
14	Sewage Lagoons	7-9	7-11	3	Collect surface water and sediment samples, collect ground water samples
		10-8	10-9	2	Collect ground water samples
19	AED Demilitarization Test Facility	7-12	7-13	2	Collect surface soil samples
20	AED Deactivation Furnace Site	7-14	7-14	1	Collect surface soil samples
21	Deactivation Furnace Building	7-15	7-15	1	Collect surface soil samples
34	Pesticide Handling and Storage	7-16	7-16	1	Collect surface soil samples
37	Contaminated Waste Processing Plant	7-21	7-21	1	Collect surface soil samples
38	Industrial Wastewater Treatment Plant	7-22	7-22	1	Collect soil and GAC samples
4	Sandblast Areas	7-23	7-23	1	Collect surface soil samples
46	Used Oil Dumpsters	7-24	7-28	5	Collect surface and shallow soil samples
47	Boiler Blowdown Water	7-29	7-29	1	Collect surface water and sediment samples
NA	Background Soils	7-30	7-30	1	Collect surface and shallow soil samples



SUBJECT NO. 2942.0120

Source: Modified from USGS Grantsville and South Mountain 7.5 minute quadrangles.

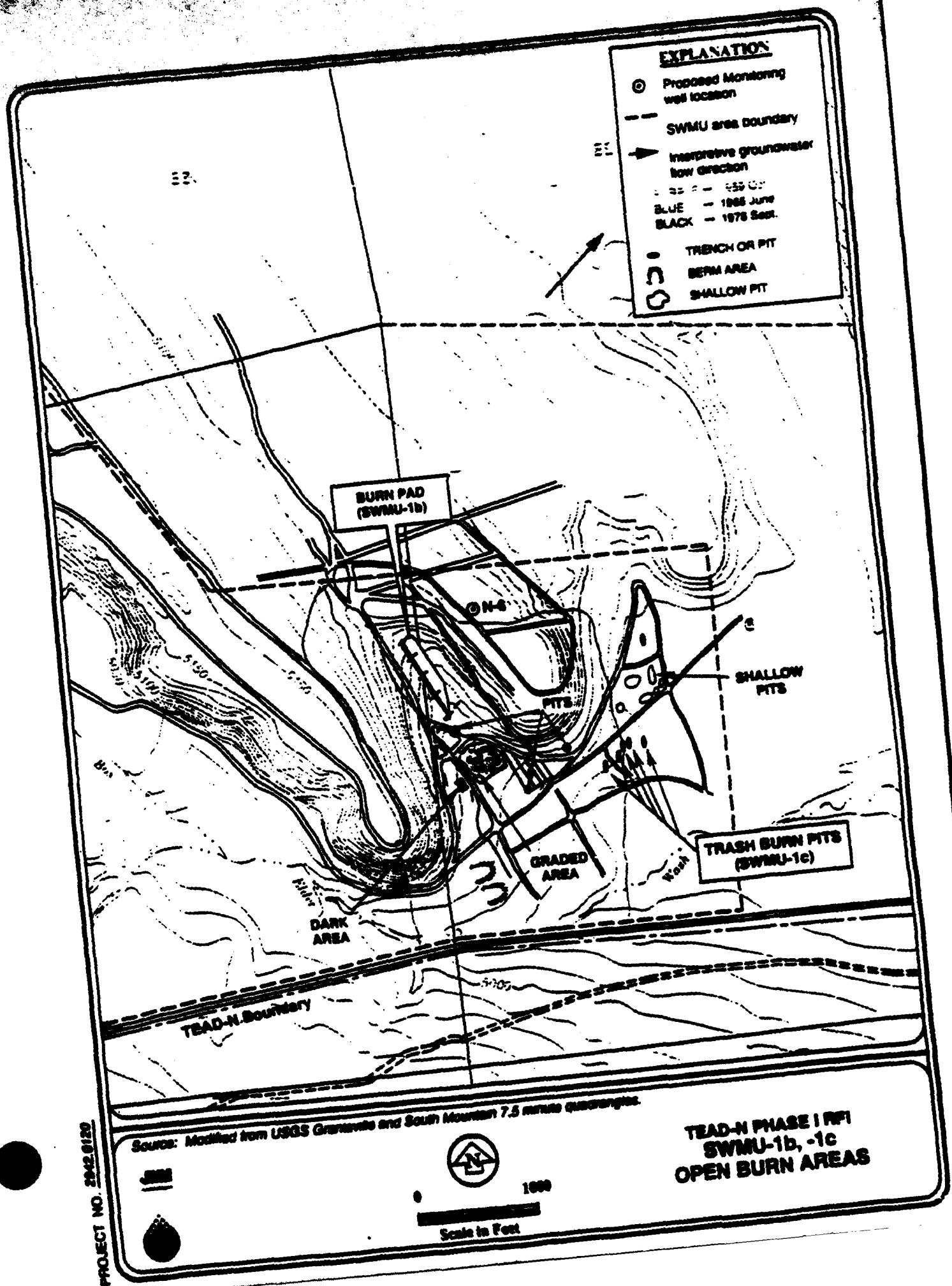
\* Burn pan locations during site visit in November 1981.

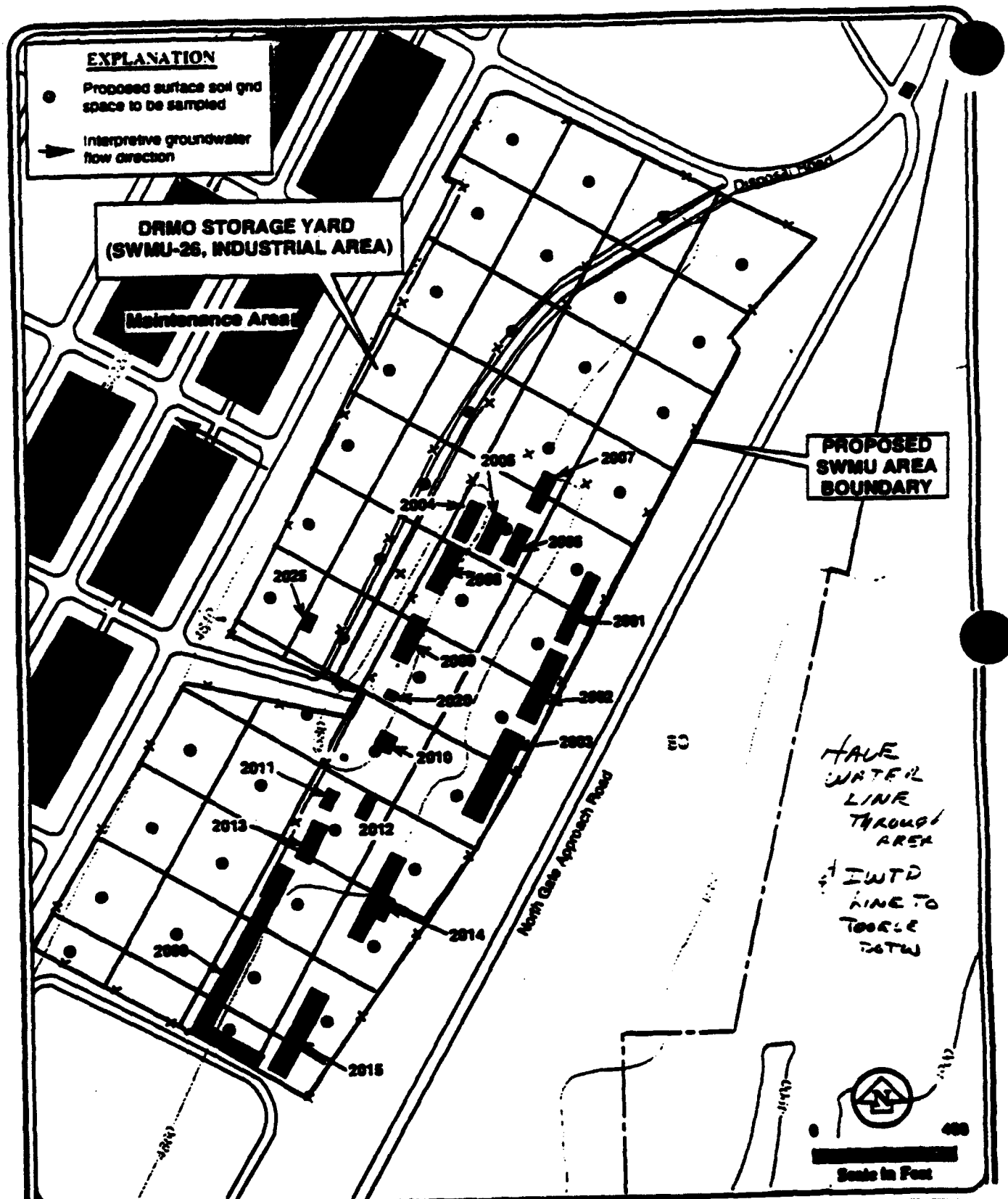


1000

Scale in Feet

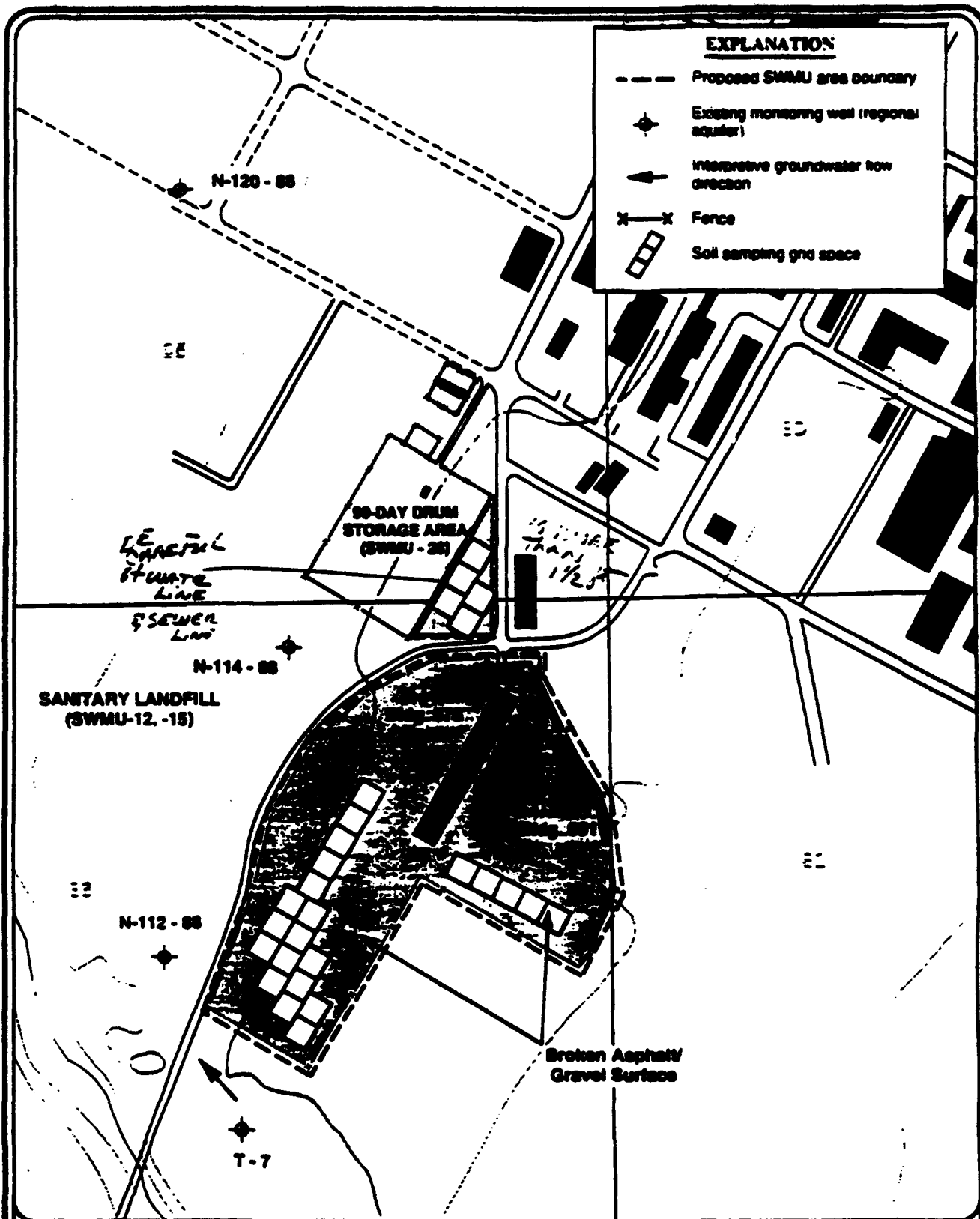
**TEAD-N PHASE I RFI  
SWMU-1, -1a AND -1d  
OPEN BURN/  
OPEN DETONATION AREA**





OBJECT NO. 2042-0120

TEAD-N PHASE I RFI  
SWMU-26  
DRMO STORAGE YARD  
GRID SAMPLE SPACES



PROJECT NO. 2942.0129

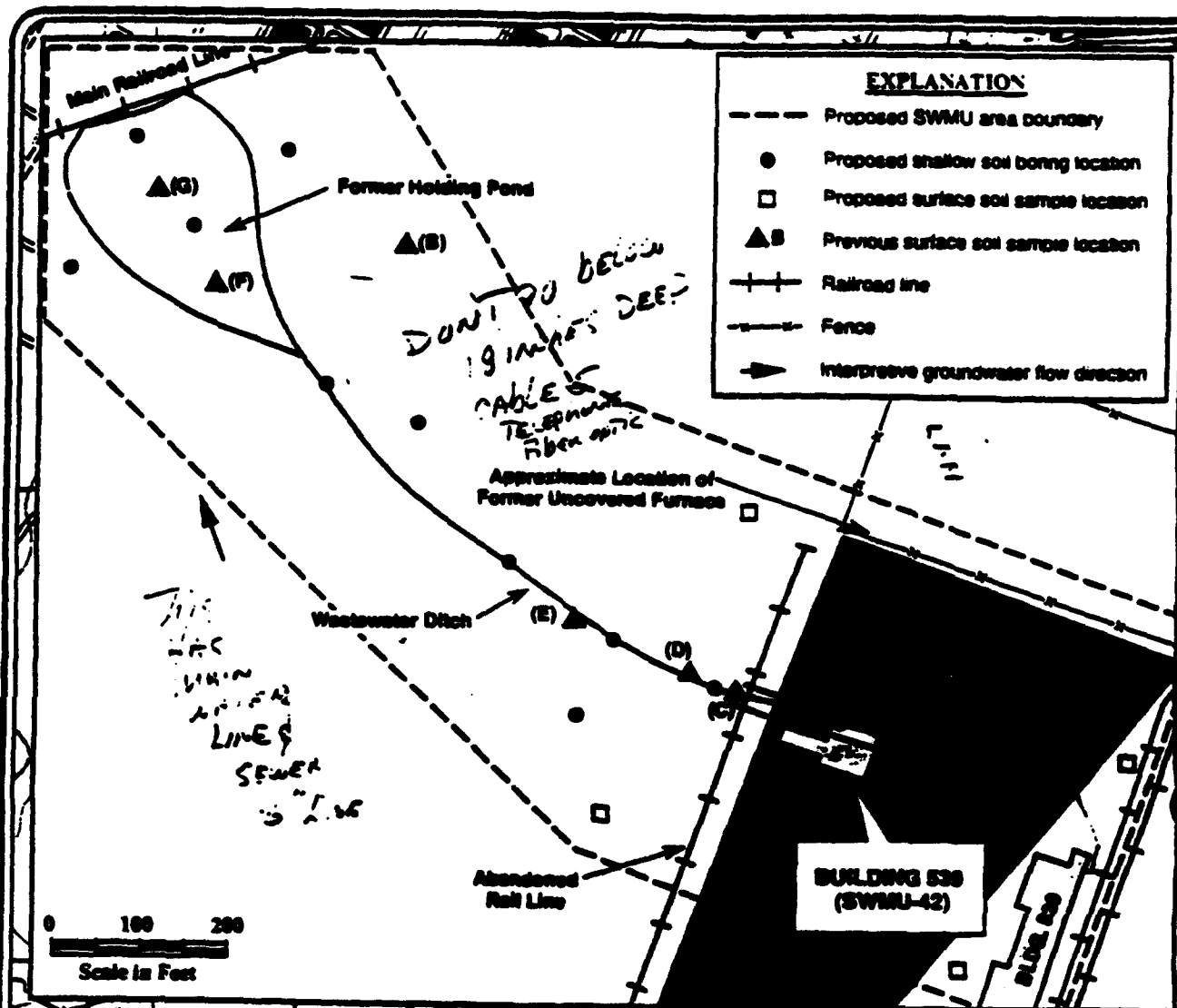
Source: Modified from USGS Toole 7.5 minute quadrangle.



0 400 800

Scale in Feet

TEAD-N PHASE I RFI  
SWMU-29  
DRUM STORAGE AREAS  
SAMPLING GRID SPACES



Source: Modified from USGS Topo 7.5 minute quadrangle.



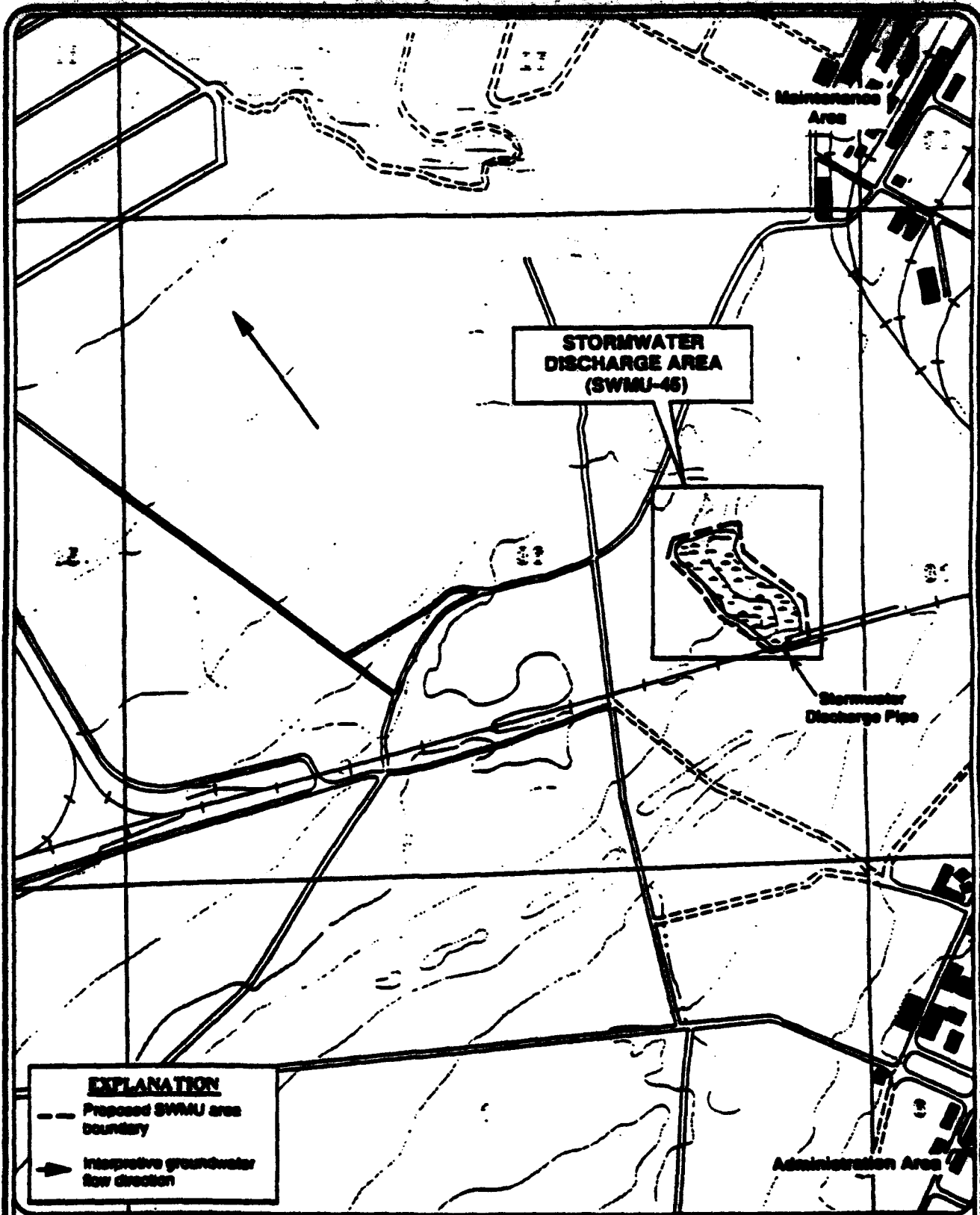
1000

Scale in Feet

TEAD-N PHASE I RFI  
SWMU-42  
BOMB WASHOUT BUILDING

PROJECT NO. 2842.0120





**EXPLANATION**

-- Proposed SWMU area boundary

➔ Interpretive groundwater flow direction

Source: Modified from USGS Topographic 7.5 minute quadrangle.

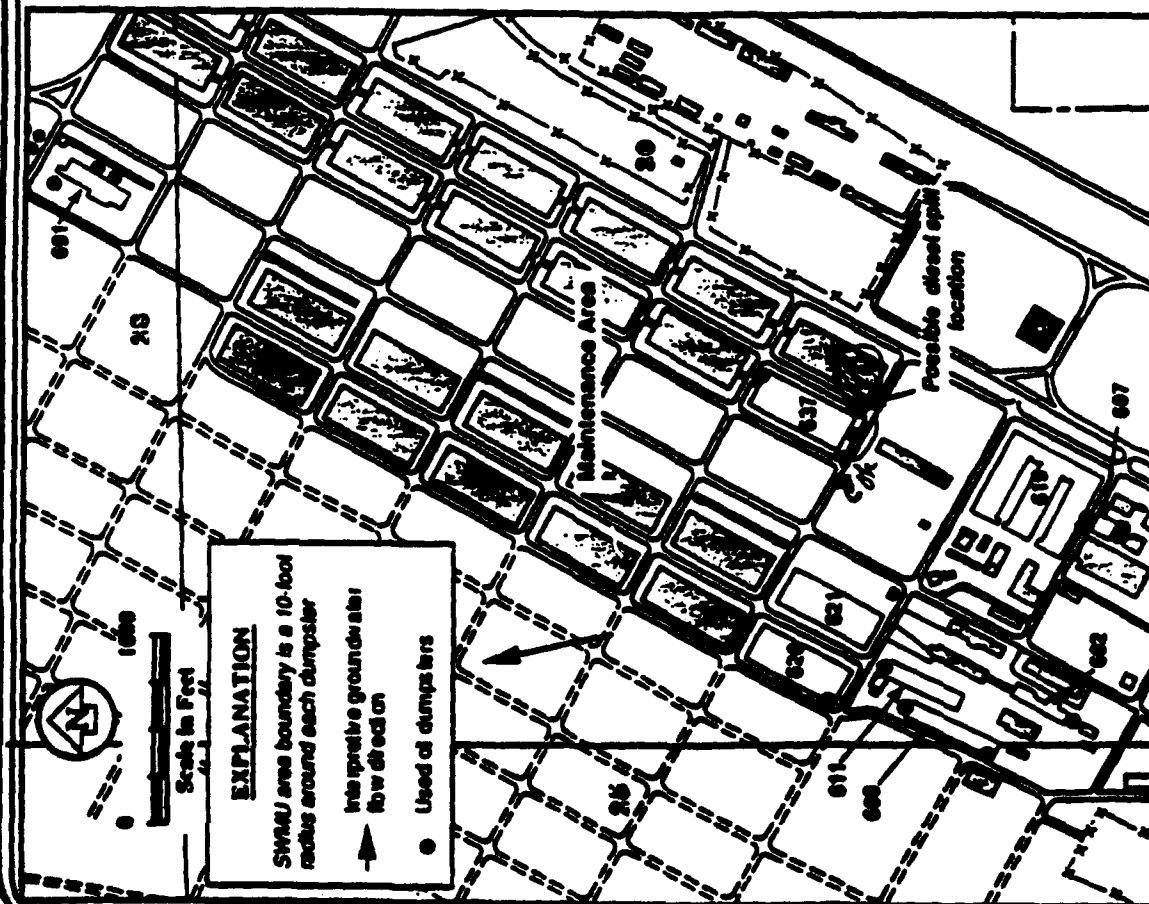


1000

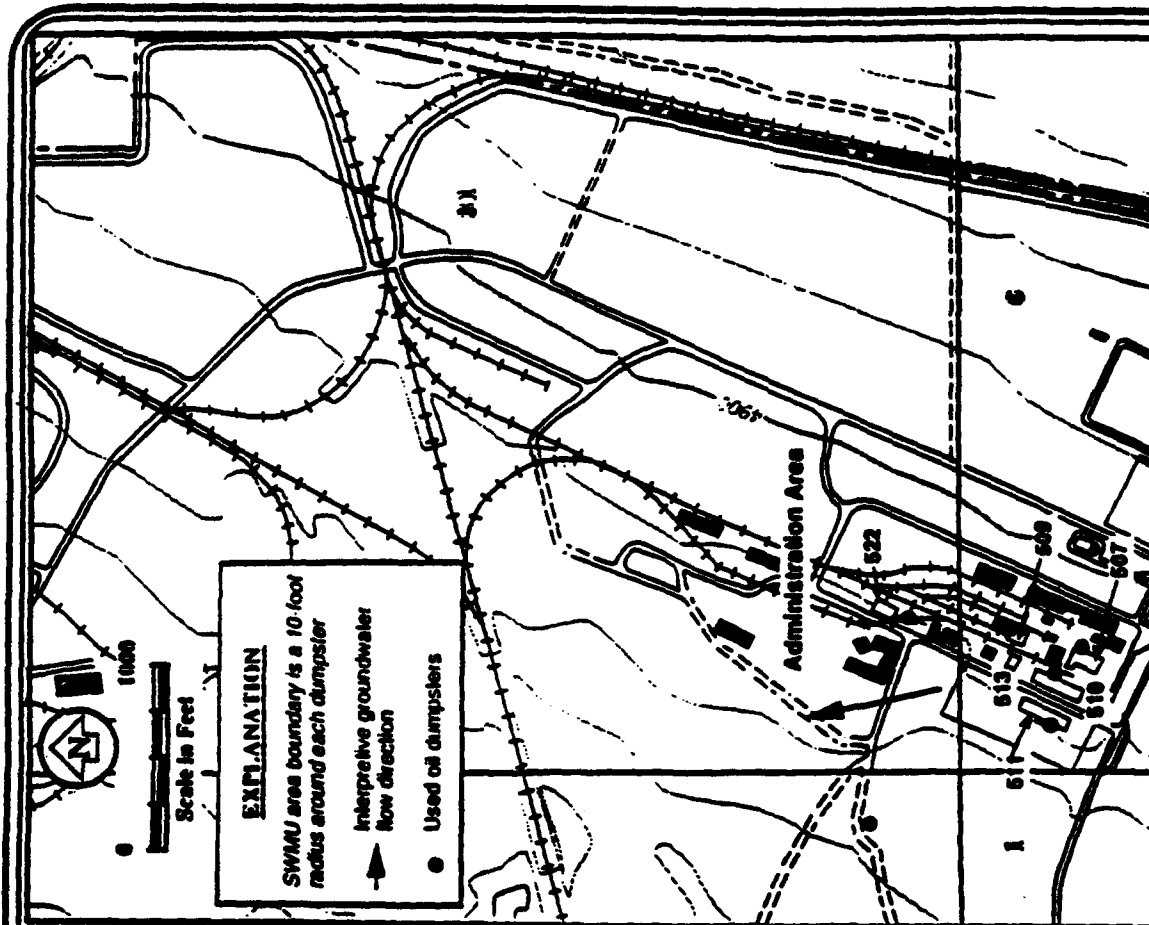
Scale in Feet

TEAD-N PHASE I RFI  
SWMU-45  
**STORMWATER DISCHARGE AREA**

PROJECT NO. 2942.9129



Source: Modified from USGS Topographic 7.5 minute quadrangle.



TEAD-N PHASE I RFI  
 SWMU-46  
 USED OIL DUMPSTERS

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## Appendix J



**MONTGOMERY WATSON**

## **APPENDIX J**

### **GEOTECHNICAL TESTING RESULTS**

#### **J.1 INTRODUCTION**

**J.1.0.1.** This appendix presents the data from the geotechnical testing program conducted on selected soil samples collected during the course of the RFI field investigation at TEAD N. As outlined in Section 4.3.7 of the RFI Data Collection Quality Assurance Plan (DCQAP)(JMM, 1992b), approximately 12 percent of the soil samples collected were submitted to Dames and Moore, Inc. for analysis at their geotechnical laboratory in Salt Lake City, Utah. These soil samples were submitted for the purpose of confirming the on-site soil descriptions and Unified Soil Classification System (USCS) designations made on all collected soil samples.

**J.1.0.2.** As described in the DCQAP, the following criteria were used in determining which soil samples were submitted:

- *At least one sample from each major soil horizon at each SWMU*
- *At least one soil sample from each soil horizon encountered at the background soil locations*
- *Samples representative of each major soil unit encountered in the deep soil borings at the OB/OD Area.*

#### **J.2 GEOTECHNICAL PROGRAM**

##### **J.2.1. Geotechnical Program Summary**

**J.2.1.1.** A total of 74 selected soil samples were submitted for the following analyses:

- *Particle size determination using sieve analysis, including percent moisture content*

- Atterburg Limits analysis
- Specific gravity determination.

**J.2.1.2. Results** were received for 74 sieve analyses, 71 Atterburg Limits analyses, and 73 specific gravity determinations. Three soil samples lacked sufficient quantity to run Atterburg Limits analyses, and one of these samples was insufficient for a determination of specific gravity. USCS designations were not made for the three samples which were not tested for Atterburg Limits.

## **J.2.2. Summary of Sample Results**

**J.2.2.1. Sieve Analysis.** The soil samples were placed through a total of 10 sieves, ranging in size from 37.5 mm to 0.075 mm (#200), and the percent of total weight retained on each sieve was recorded. On the basis of the sieve analyses, the following designations were made for the 74 tested samples:

- Fourteen of the soils were gravels (i.e. the largest fraction of the soil, by weight, was composed of material which was retained on a #4 sieve)
- Thirty-two of the soils were sands (i.e. the largest soil fraction, by weight, passed a #4 sieve, but was retained on a #200 sieve)
- Twenty-eight of the samples were fine-grained soils (i.e. the largest fraction of material, by weight, passed a #200 sieve).

**J.2.2.2. Atterburg Limits Analysis.** Three soil samples lacked sufficient quantity to attempt Atterburg Limits analysis, and 39 samples were not sufficiently plastic as to allow Atterburg determinations. The results of the 32 completed analyses are as follows:

- Thirteen of the soils were designated as lean clays (CL)
- Eleven of the soils were designated as silts (ML)
- Eight of the samples were given the classification CL-ML, a borderline designation between lean clay and silt

- No designations of CH (fat clay) or MH (elastic silt) were made
- The Plasticity Index determinations (Liquid Limit minus the Plastic Limit) for the analyzed samples ranged from 1 to 17.

**J.2.2.3. Specific Gravity Analysis.** Results of the Specific Gravity analyses can be summarized as follows:

- Specific gravity determinations of fine-grained soils ranged from 2.599 to 2.776 g/cc.
- Specific gravities of the coarse-grained soils ranged from 2.488 to 2.890 g/cc.

**J.2.2.4. USCS Designations.** To make a final laboratory USCS designation, results from the sieve and Atterburg Limits analyses are both used. The final USCS classifications for the submitted soil samples are summarized as:

<u>Soil Type</u>	<u>Number of Samples (% of Total Samples)</u>
Gravel	13 (18%)
Sand	38 (54%)
Silt	6 (8%)
Silt/Clay	3 (4%)
Clay	11 (15%)

### **J.2.3. Comparison of Field Call-Outs With Laboratory Classification**

**J.2.3.1.** In general, there was good agreement between the field call-outs and the laboratory classifications. Forty-seven of the submitted soil samples (66 percent) were correctly classified in the field by the field geologists. Of the 24 discrepancies, many resulted from the sampling procedure methodology. Soils submitted for geotechnical testing were generally those left in the sample bowl after the analytical sample aliquot had been removed. As this analytical sample aliquot was collected from the finer-grained portion of the soil sample, its removal left the coarser fraction of the sample (especially the gravel-size fraction) for geotechnical analysis. For this reason, many of the 24 discrepancies between the field call-outs and the laboratory classifications resulted from laboratory analysis of nonrepresentative soil samples.

# **DAMES & MOORE**

127 SOUTH 500 EAST, SUITE 300, SALT LAKE CITY, UTAH 84103-1450  
(801) 521-9255 FAX: (801) 521-0380

October 1, 1992

Deborah Carter-Drain  
James M. Montgomery Consulting Engineers  
Salt Lake City, Utah

Dear Deborah

Please find enclosed results of soil analysis you requested in your letter dated August 20 1992.

Results include 74 Particle analyses (no hydrometer) with moistures, 71 Atterberg limits, and 73 Specific Gravity analyses.

A summary page precedes the test results which notes discrepancies encountered during testing.

Please call me if you have any questions (521-9255).

Sincerely,

Dames & Moore, Inc.



Erick E. Rosik  
Soils Laboratory Manager

GA  
ON CAL  
(specifically  
also)

✓SB-42-002	2-4'	✓ <sup>correct</sup> 30's	✓45-42-008	0-0.2' ... correct JD
✓B-42-006	2-4'			
✓B-BE-001	0-1'			

\* could not run, walk, sit, or  
- not enough energy

○ did not have enough  
energy, sleep, or water.



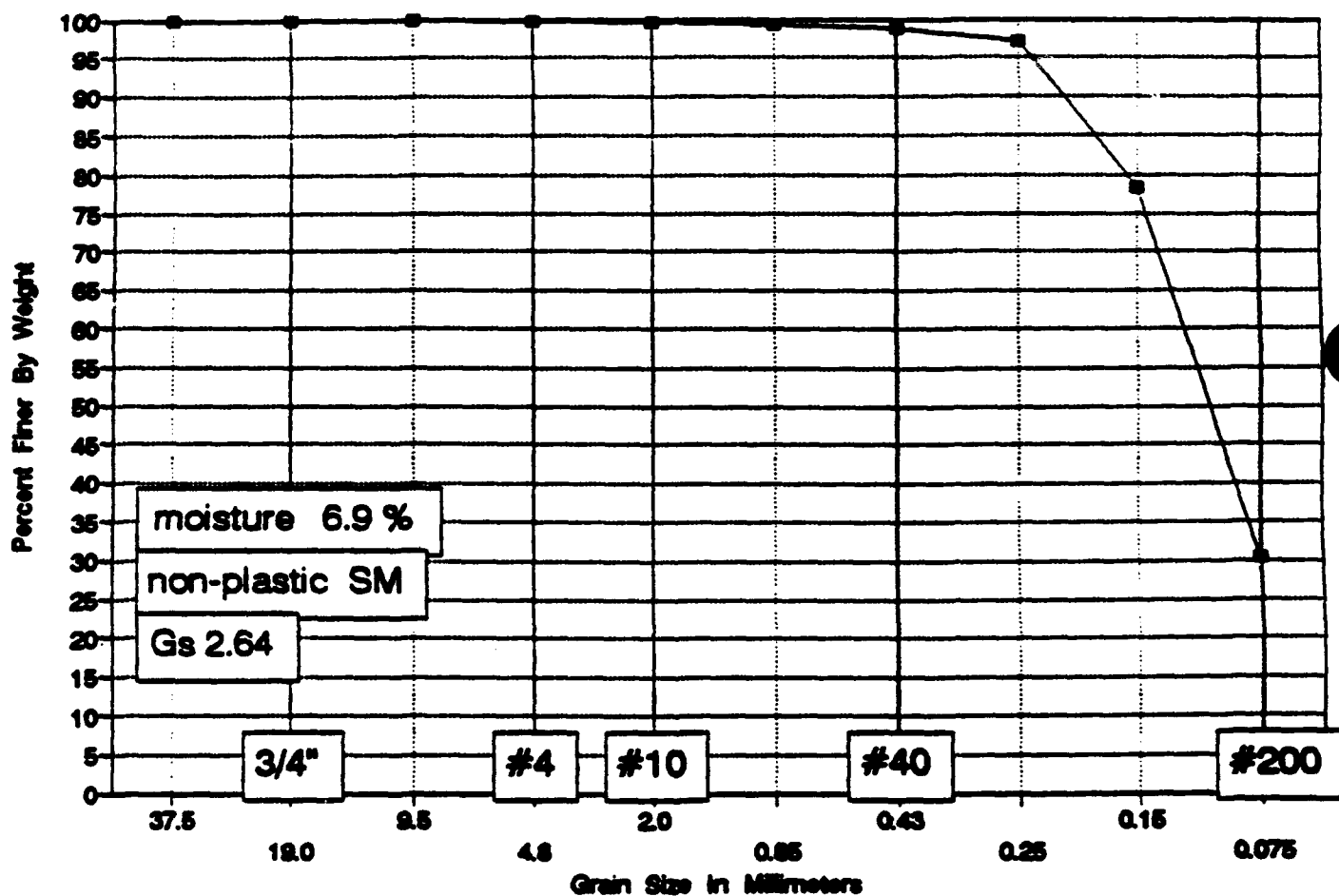
**EXCAVATION PIT SAMPLES**

**OB/OD AREA**

**(SWMUs 1, 1a, 1b, 1c, 1d)**

# GRADATION CURVE

Site EP-01-001, Sample at 4 to 5 feet



James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-001

Depth- 4-5 feet

Moisture Content = 6.9

Wt soil and dish	193.9
Dry soil & dish	188.1
Dish	103.5

### SIEVE ANALYSIS

Dry weight of total sample= 84.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0.31	99.63%	99.6	4.8
# 10	0.44	99.48%	99.5	2.0
# 20	0.56	99.34%	99.3	0.85
# 40	0.95	98.88%	98.9	0.43
# 60	2.41	97.15%	97.2	0.25
# 100	18.46	78.18%	78.2	0.15
# 200	58.96	30.31%	30.3	0.075

# MECHANICAL ANALYSIS

SA

DATE 9/4/92 BY LA  
 JOB NUMBER -6051 OWNER/CLIENT U.S. Montgomery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 001 DEPTH 4-5'

NUMBER OF RINGS	<u>big</u>	DISH	<u>97</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>193.9</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>188.1</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>103.5</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>6.9</u>

WASH SEIVE \_\_\_\_\_ DRY SEIVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		<u>0</u>		
		#4		<u>0.31</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>0.44</u>			
		#20		<u>0.56</u>			
		#40		<u>0.95</u>			
		#60		<u>2.41</u>			
		#100		<u>18.46</u>			
		#200		<u>58.96</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING EP-01 SAMPLE 001 DEPTH 4-5'

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

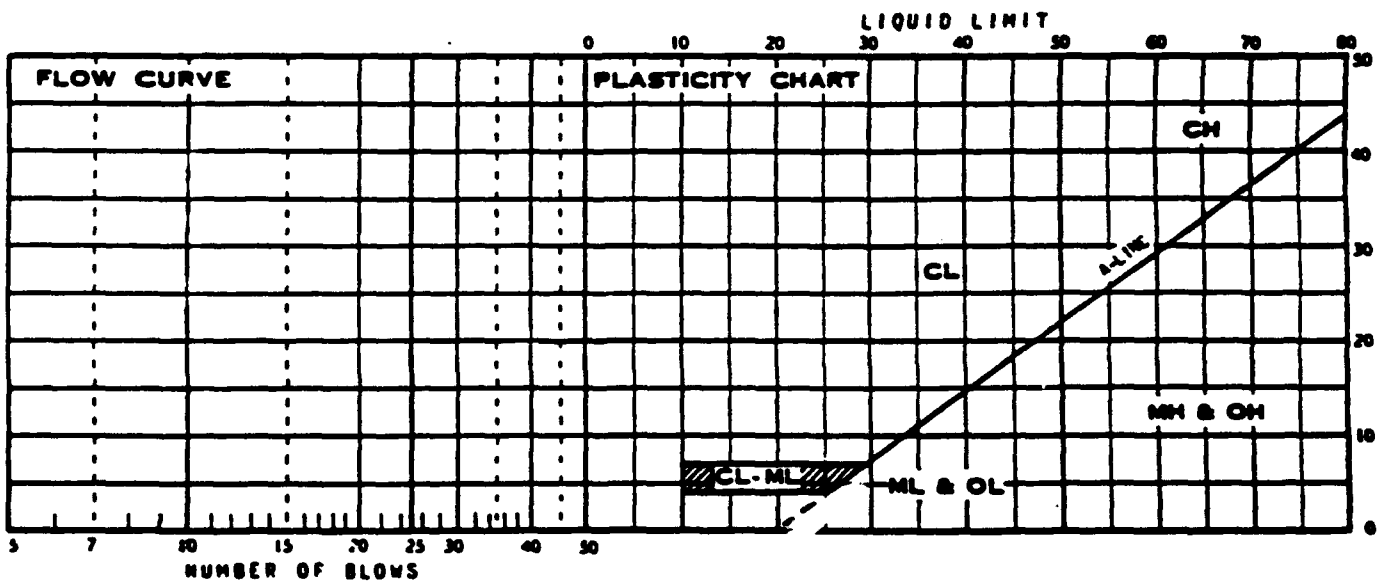
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY CAF. 9992

DETERMINATION	1	2	3	4	5	6
DISH	<u>A-4</u>	<u>AL 94</u>	<u>could not thread (sandy)</u>			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 83</u>	<u>A-6</u>	<u>611</u>	<u>could not get adequate blow count (25)</u>		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						

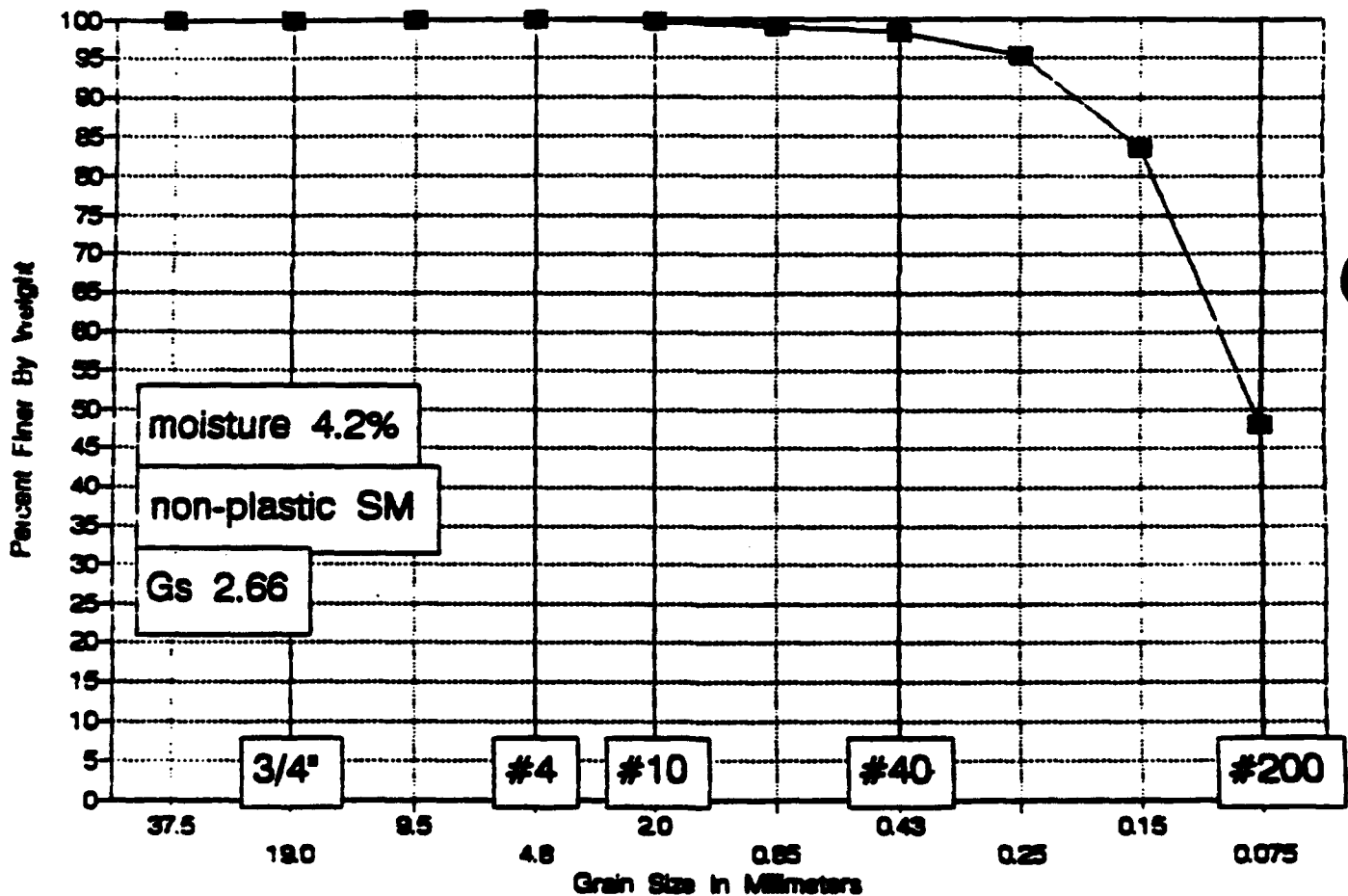


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site EP-01-006, Sample at 5 to 5.5 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	EP-01-006	Wt soil and dish	244.5
		Dry soil & dish	239.1
Depth	5-5.5 feet	Dish	109.2
Moisture Content =	4.2		

#### SIEVE ANALYSIS

Dry weight of total sample= 129.9

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.4	99.69%	99.7	2.0
# 20	1.4	98.92%	98.9	0.85
# 40	2.2	98.31%	98.3	0.43
# 60	6.2	95.23%	95.2	0.25
# 100	21.3	83.60%	83.6	0.15
# 200	67.4	48.11%	48.1	0.075

# MECHANICAL ANALYSIS

SA

DATE 9/10/92 BY LAF  
 JOB NUMBER -6081 OWNER/CLIENT JM Montgomery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 006 DEPTH 5-5.5

NUMBER OF RINGS	<u>bag</u>	DISH	<u>316</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>244.5</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>239.1</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>109.2</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>4.2</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		.4			
		#20		1.4			
		#40		2.2			
		#60		6.2			
		#100		21.3			
		#200		67.4			
		PAN					
		TOTAL					



# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. -10051  
CLIENT/OWNER JM Montgomerie  
LOCATION \_\_\_\_\_  
BORING EP-01 SAMPLE 006 DEPTH 5.55

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

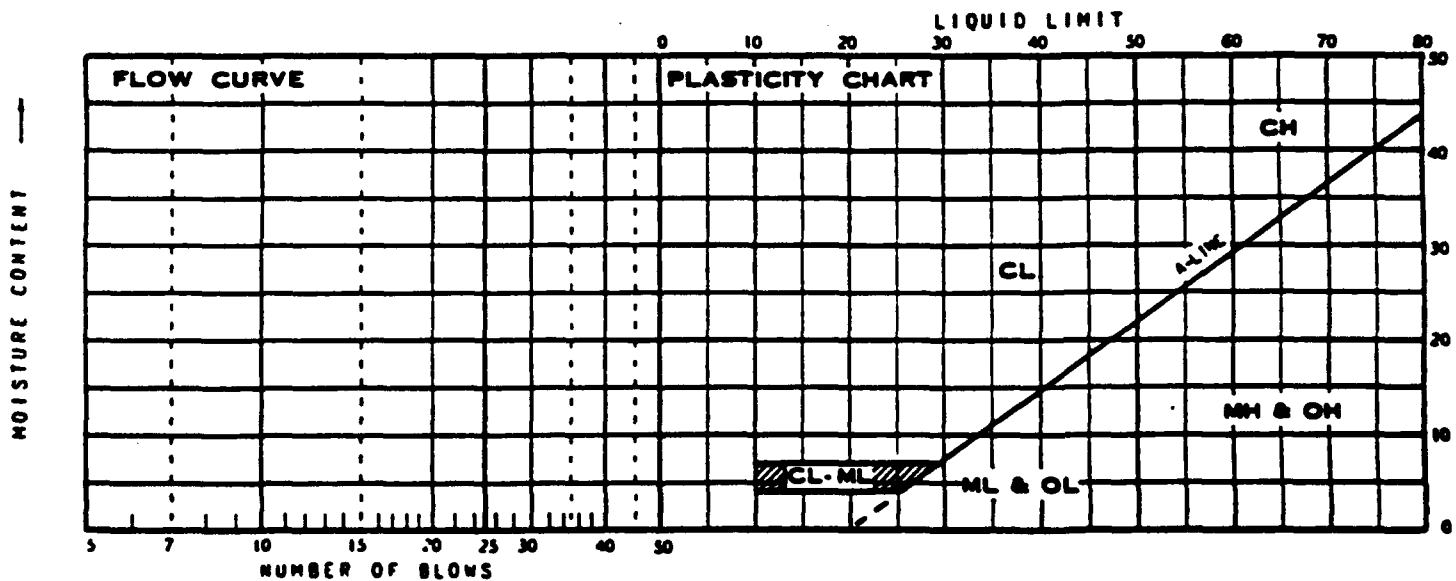
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY UOE 91492

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL129</u>	<u>AL5</u>	<u>could not thread</u>			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL114</u>	<u>AL98</u>	<u>AL11</u>	<u>could not get adequate blow count</u>		
NUMBER OF BLOWS					<u>(25)</u>	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						

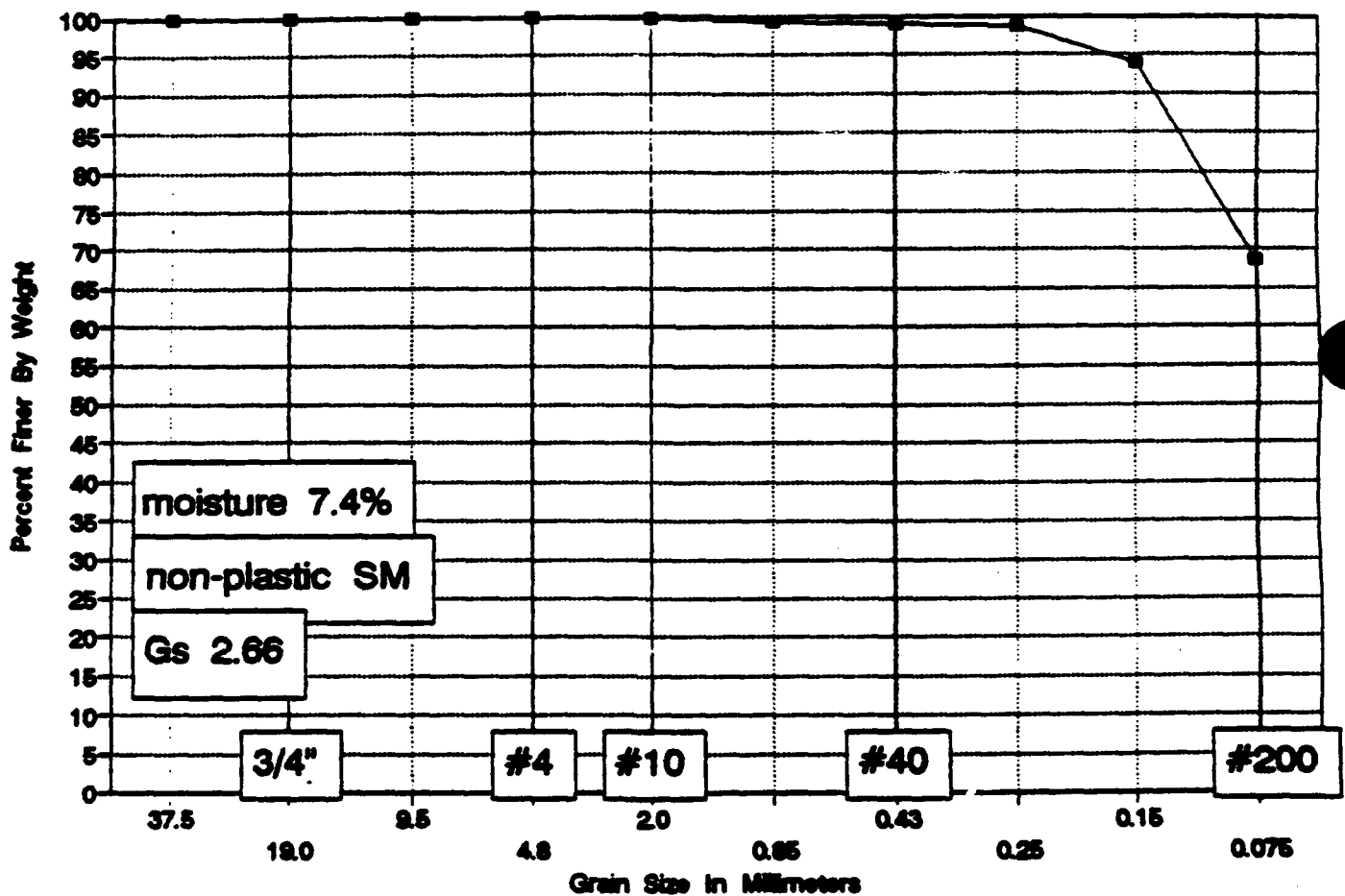


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site EP-01-007, Sample at 5 to 5.5 feet



James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-007

Depth 5-5.5 feet

Moisture Content = 7.4

Wt soil and dish	227.4
Dry soil & dish	219.1
Dish	106.9

# SIEVE ANALYSIS

Dry weight of total sample= 112.2

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.3	99.73%	99.7	2.0
# 20	0.8	99.29%	99.3	0.85
# 40	1.1	99.02%	99.0	0.43
# 60	1.6	98.57%	98.6	0.25
# 100	6.8	93.94%	93.9	0.15
# 200	35.1	68.72%	68.7	0.075

# MECHANICAL ANALYSIS

34-

DATE 9/3/92

BY LAF

JOB NUMBER - 0081

OWNER/CLIENT Jm Montzornery

LOCATION \_\_\_\_\_

BORING EP-01

SAMPLE 007

DEPTH 5-5.5'

NUMBER OF RINGS	<u>12.7</u>	DISH	<u>169</u>
WT. OF RINGS & WET SOIL	<u>227.4</u>	WT. OF DISH & WET SOIL	<u>227.4</u>
WT. OF RINGS	<u>219.1</u>	WT. OF DISH & DRY SOIL	<u>219.1</u>
WT. OF WET SOIL	<u>106.9</u>	WT. OF MOISTURE	<u>106.9</u>
FIELD DENSITY		WT. OF DISH	<u>106.9</u>
DRY DENSITY		WT. OF DRY SOIL	<u>7.4</u>
		FIELD MOISTURE CONTENT	<u>7.4</u>

WASH SEIVE \_\_\_\_\_ DRY SEIVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		<u>0</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>0.3</u>			
		#20		<u>0.8</u>			
		#40		<u>1.1</u>			
		#60		<u>1.6</u>			
		#100		<u>6.8</u>			
		#200		<u>35.1</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_

LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. 2001

CLIENT/OWNER MM

LOCATION \_\_\_\_\_

BORING EP-01 SAMPLE 007 DEPTH 2-5

## FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

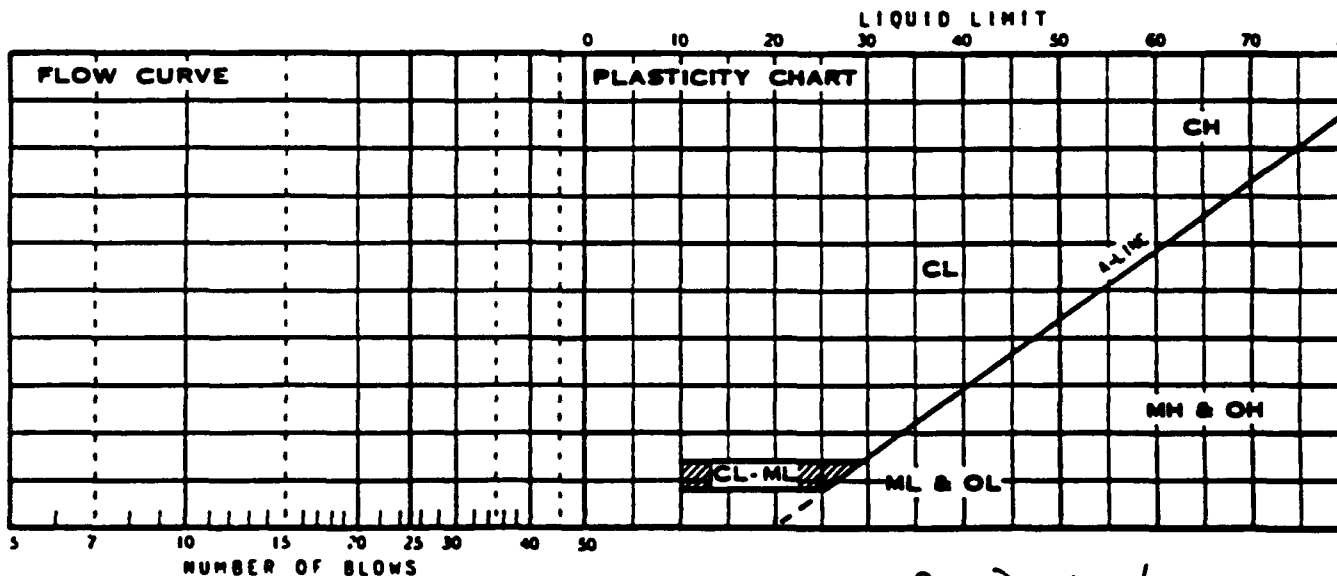
## PLASTIC LIMIT BY PC-94.92

DETERMINATION	1	2	3	4	5	6
DISH						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH						
WT OF DRY SOIL						
MOISTURE CONTENT						

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH						
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH						
WT OF DRY SOIL						
MOISTURE CONTENT						

MOISTURE CONTENT



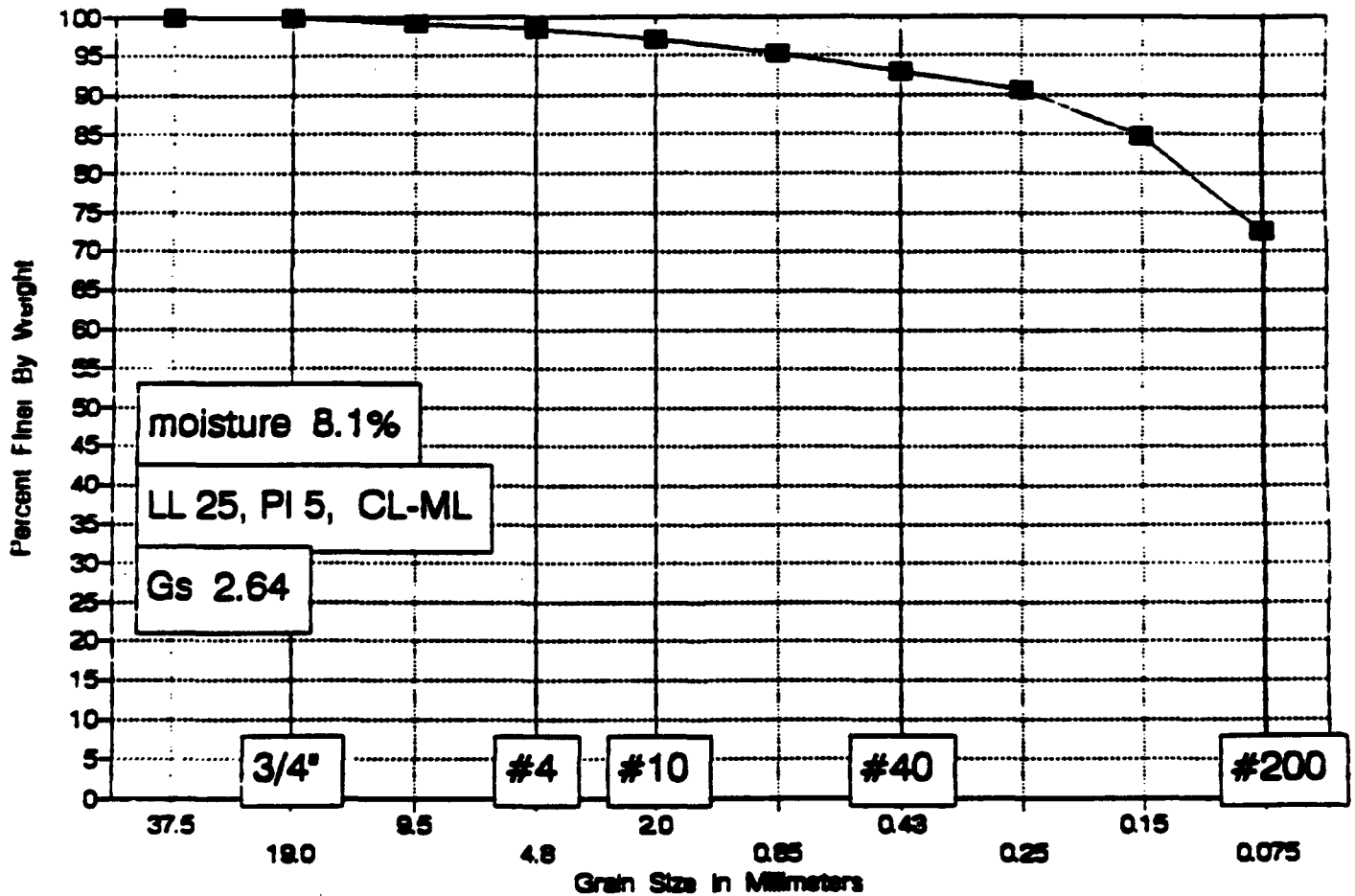
## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION

No Plastic Limit

# GRADATION CURVE

Site EP-01-010, Sample at 2.5 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	EP-01-010	Wt soil and dish	268.3
Depth	2.5 feet	Dry soil & dish	256.4
		Dish	109.7
Moisture Content =	8.1		

#### SIEVE ANALYSIS

Dry weight of total sample= 146.7

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	1.1	99.25%	99.3	9.5
# 4	2.2	98.50%	98.5	4.8
# 10	4.2	97.14%	97.1	2.0
# 20	7	95.23%	95.2	0.85
# 40	10.2	93.05%	93.0	0.43
# 60	13.9	90.52%	90.5	0.25
# 100	22.3	84.80%	84.8	0.15
# 200	40	72.73%	72.7	0.075

SA

## MECHANICAL ANALYSIS

DATE 9/10/92 BY LIF  
 JOB NUMBER -6081 OWNER/CLIENT Jm montgomery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 010 DEPTH 25'

NUMBER OF RINGS	<u>mag</u>	DISH	<u>206</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>268.3</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>256.4</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>109.7</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>8.1</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		1.1		
		#4		2.2		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCU. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		4.2			
		#20		7.0			
		#40		10.2			
		#60		13.9			
		#100		22.3			
		#200		40.0			
		PAN					
		TOTAL					

*dl*  
Dames & Moor



# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING ER-01 SAMPLE 010 DEPTH 25'

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

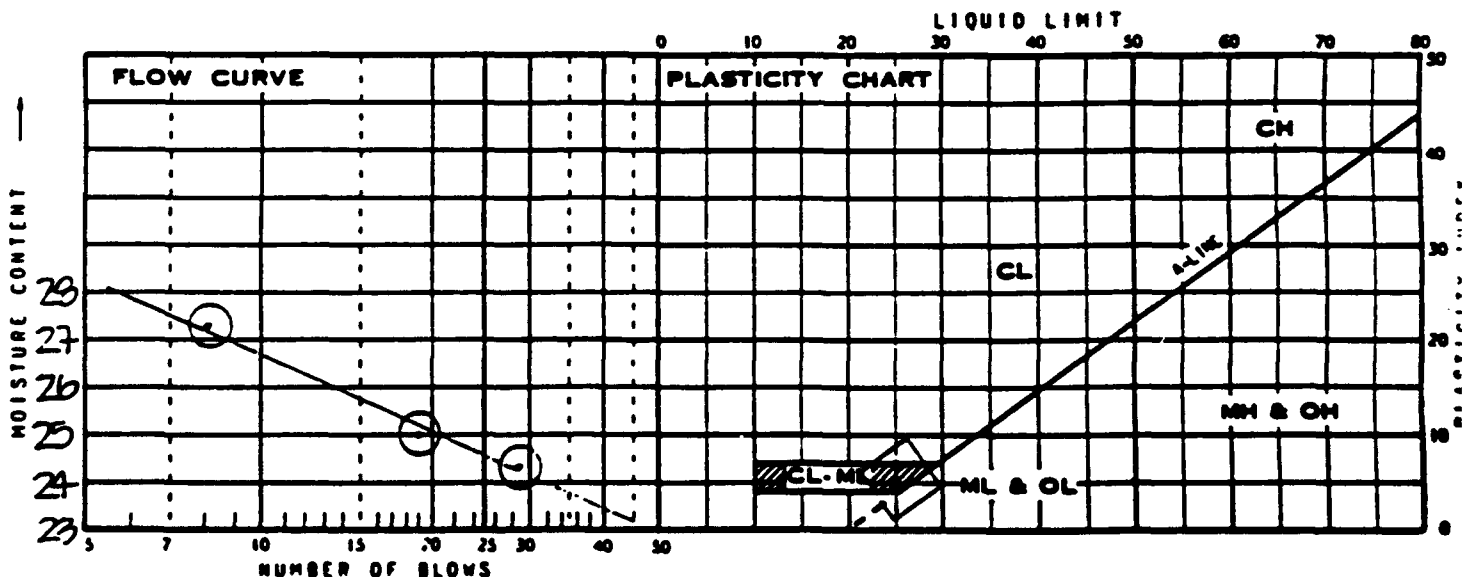
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY CAF-91492

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL129</u>	<u>AL5</u>				
WT OF DISH + WET SOIL	<u>15.70</u>	<u>15.76</u>				
WT OF DISH + DRY SOIL	<u>13.33</u>	<u>13.43</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT	<u>19.70</u>	<u>19.37</u>	<u>X=20</u>			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL114</u>	<u>AL98</u>	<u>AL11</u>			
NUMBER OF BLOWS	<u>14.43</u>	<u>11.70</u>	<u>12.27</u>			
WT OF DISH + WET SOIL	<u>29</u>	<u>19</u>	<u>8</u>			
WT OF DISH + DRY SOIL	<u>11.98</u>	<u>9.64</u>	<u>9.94</u>			
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT	<u>24.33</u>	<u>25.00</u>	<u>27.28</u>			

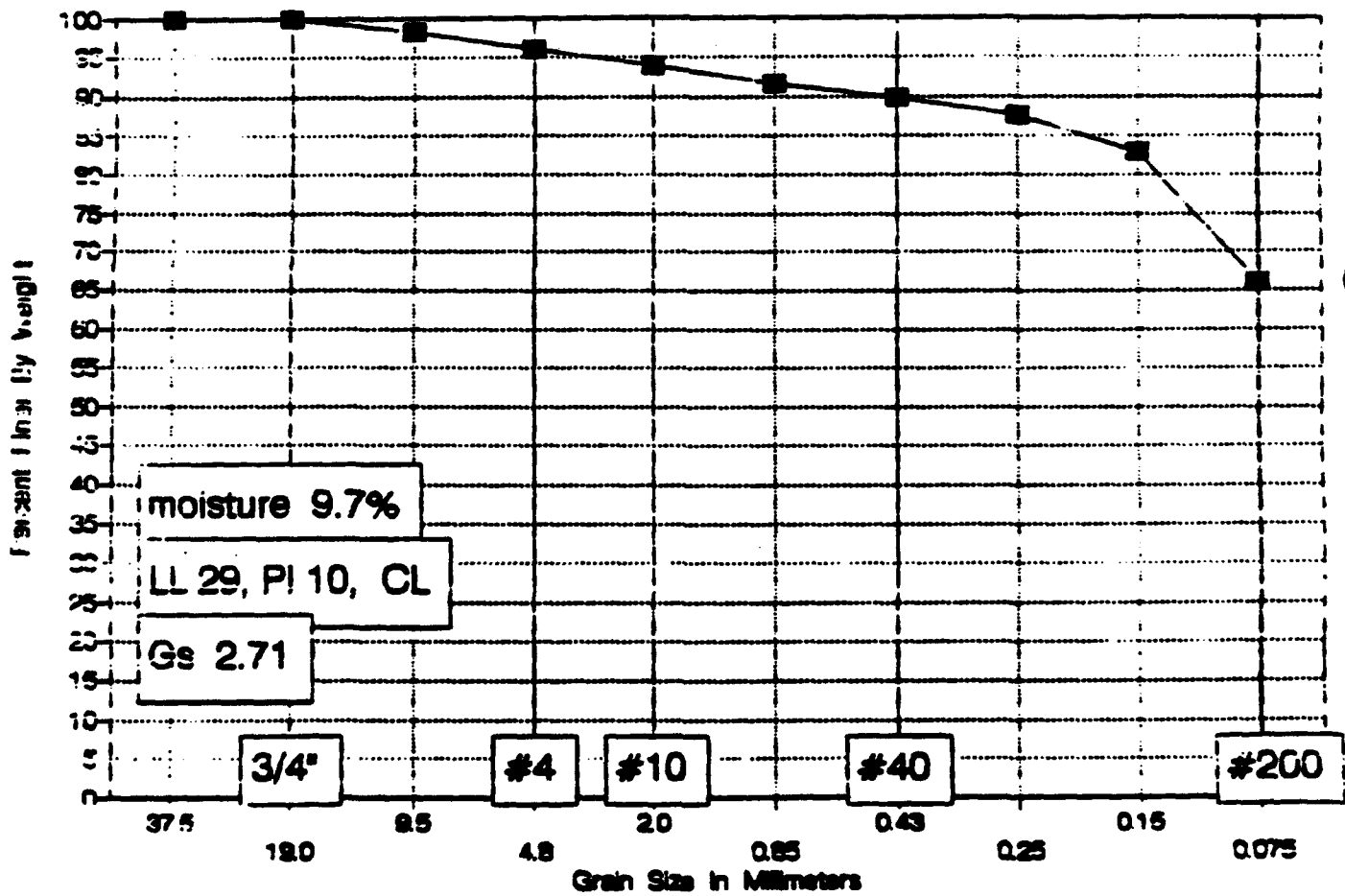


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		<u>25</u>	<u>20</u>	<u>5</u>	<u>CL-MH</u>

# GRADATION CURVE

Site EP-01-012, Sample at 2.0 feet



James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-012

Depth 2 feet

Moisture Content = 9.7

Wt soil and dish	258.3
Dry soil & dish	244.5
Dish	102.8

### SIEVE ANALYSIS

Dry weight of total sample= 141.7

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	2.54	98.21%	98.2	9.5
# 4	5.77	95.93%	95.9	4.8
# 10	8.66	93.89%	93.9	2.0
# 20	11.64	91.79%	91.8	0.85
# 40	14.32	89.89%	89.9	0.43
# 60	17.48	87.66%	87.7	0.25
# 100	24.28	82.87%	82.9	0.15
# 200	48.11	66.05%	66.0	0.075

# MECHANICAL ANALYSIS

DATE 9/4/92 BY LAF  
 JOB NUMBER -6051 OWNER/CLIENT JM MONTGOMERY  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 012 DEPTH 2'

NUMBER OF RINGS	<i>dry</i>	DISH	<u>101</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>250.3</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>244.5</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>102.0</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>9.7</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		<u>0</u>		
		3/8"		<u>2.54</u>		
		#4		<u>5.77</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>8.66</u>			
		#20		<u>11.64</u>			
		#40		<u>14.32</u>			
		#60		<u>17.48</u>			
		#100		<u>24.28</u>			
		#200		<u>48.11</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_

LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. 10001

CLIENT/OWNER Immation

LOCATION \_\_\_\_\_

BORING EE-01 SAMPLE 012 DEPTH 2

## FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	_____	_____
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

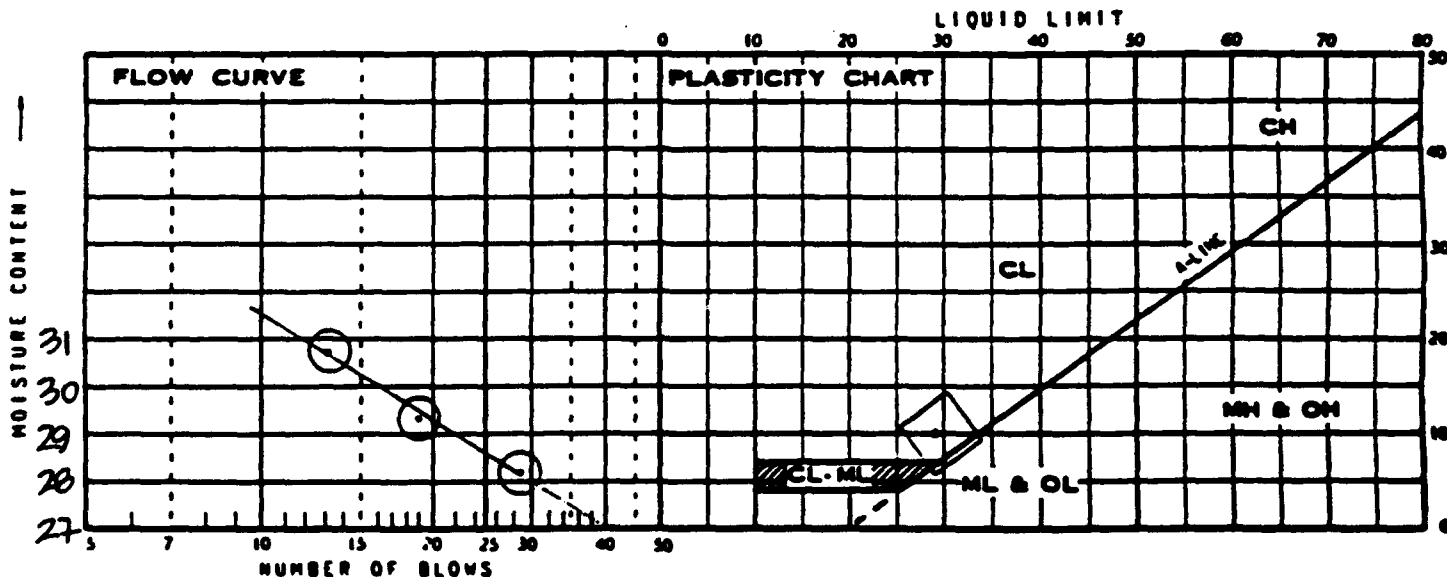
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	_____	_____
WT OF MOISTURE		
WT OF DISH	_____	_____
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

## PLASTIC LIMIT BY LAE 9.992

DETERMINATION	1	2	3	4	5	6
DISH	<u>22</u>	<u>25</u>				
WT OF DISH + WET SOIL	<u>17.42</u>	<u>19.20</u>				
WT OF DISH + DRY SOIL	<u>14.92</u>	<u>16.40</u>	_____	_____	_____	_____
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	_____	_____	_____	_____
WT OF DRY SOIL						
MOISTURE CONTENT	<u>18.49</u>	<u>18.67</u>	<u><math>\bar{x} = 19</math></u>			

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>A-12</u>	<u>A-8</u>	<u>611</u>			
NUMBER OF BLOWS	<u>29</u>	<u>19</u>	<u>13</u>			
WT OF DISH + WET SOIL	<u>12.15</u>	<u>12.52</u>	<u>11.97</u>			
WT OF DISH + DRY SOIL	<u>9.79</u>	<u>10.00</u>	<u>9.48</u>	_____	_____	_____
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>	_____	_____	_____
WT OF DRY SOIL						
MOISTURE CONTENT	<u>28.13</u>	<u>29.30</u>	<u>30.92</u>			

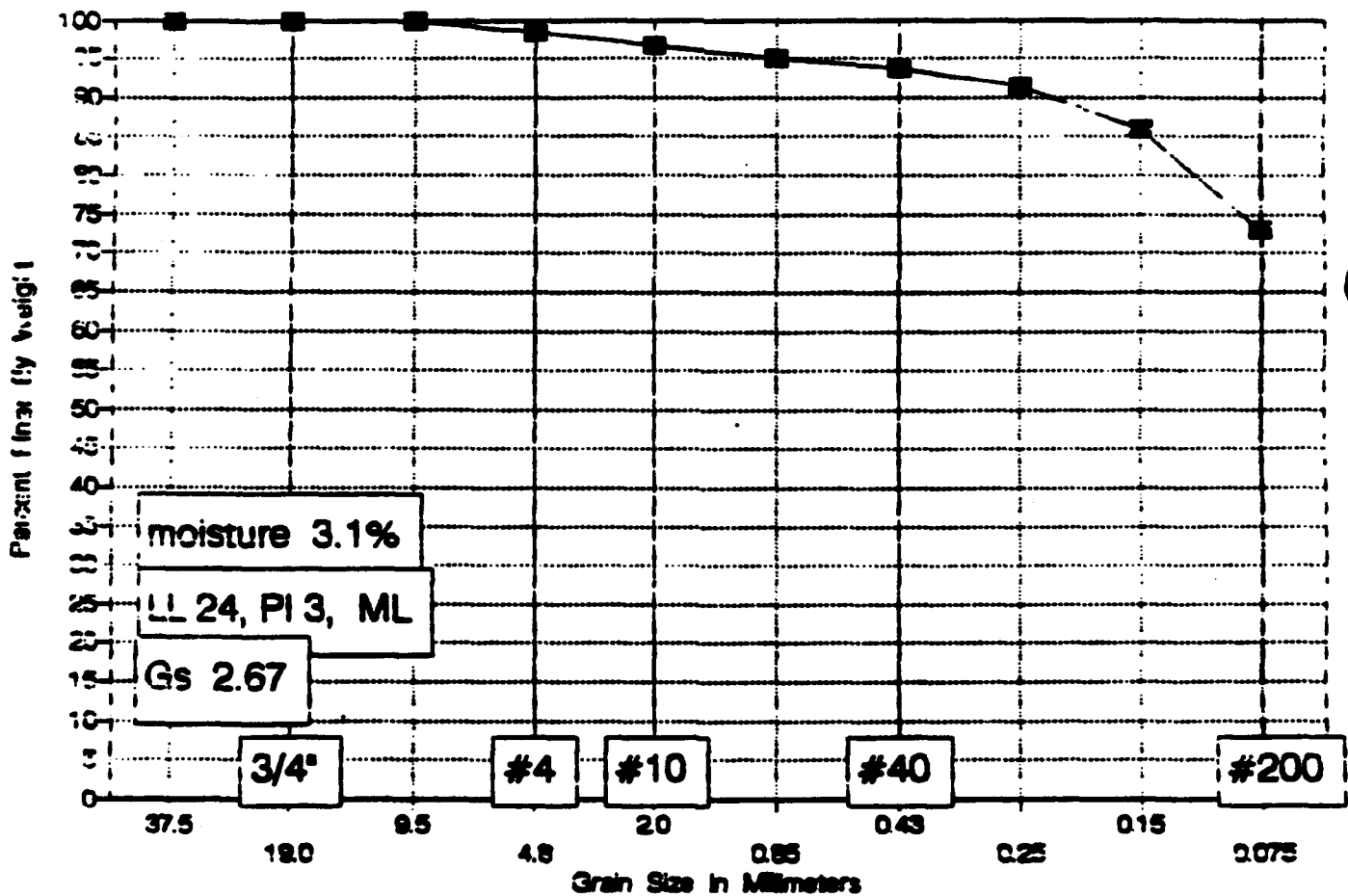


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		<u>29</u>	<u>19</u>	<u>10</u>	<u>CL</u>

# GRADATION CURVE

Site EP-01-017, Sample at 0 to 1 feet



James M. Montgomery  
F.O. 2942-0130

Site ID EP-01-017

Depth 0-1 feet

Moisture Content = 3.1

Wt soil and dish	186.1
Dry soil & dish	183.7
Dish	106.5

#### SIEVE ANALYSIS

Dry weight of total sample= 77.2

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	1.25	98.38%	98.4	4.8
# 10	2.48	96.79%	96.8	2.0
# 20	3.76	95.13%	95.1	0.85
# 40	4.87	93.69%	93.7	0.43
# 60	6.71	91.31%	91.3	0.25
# 100	10.86	85.93%	85.9	0.15
# 200	20.88	72.95%	73.0	0.075

5A

BY 1. 7:15

OWNER/CLIENT CH2M HILL

DEPTH 0-1'

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCU. WEIGHT RETAINED	ACCUMLATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	PASS	PASS
		#10		2.40			
		#20		3.76			
		#40		4.87			
		#60		6.71			
		#100		10.06			
		#200		20.06			
		PAN					
		TOTAL					



# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING

SAMPLE

DEPTH

## FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

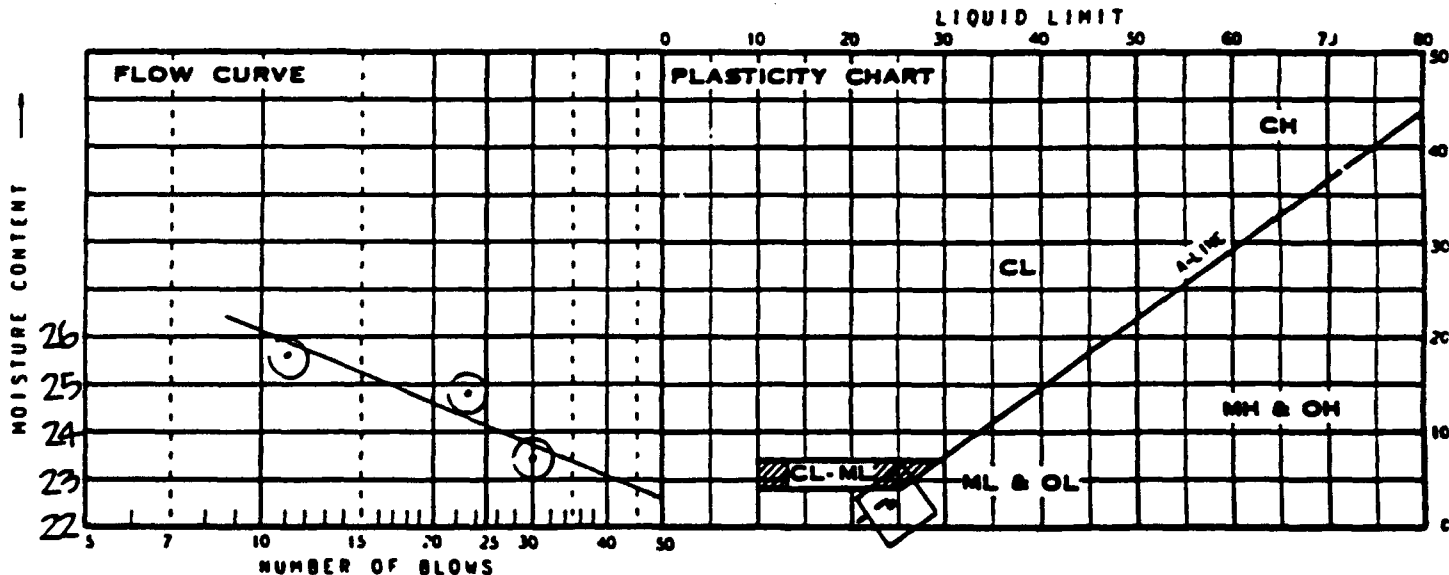
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

## PLASTIC LIMIT BY

DETERMINATION	1	2	3	4	5	6
DISH	25	AL106				
WT OF DISH + WET SOIL	12.03	13.62				
WT OF DISH + DRY SOIL	10.22	11.52				
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT	20.52	20.75	X=21			

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL131	651	AL104			
NUMBER OF BLOWS	30	23	11			
WT OF DISH + WET SOIL	8.99	10.79	10.36			
WT OF DISH + DRY SOIL	7.55	8.92	8.53			
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT	23.41	24.87	25.67			

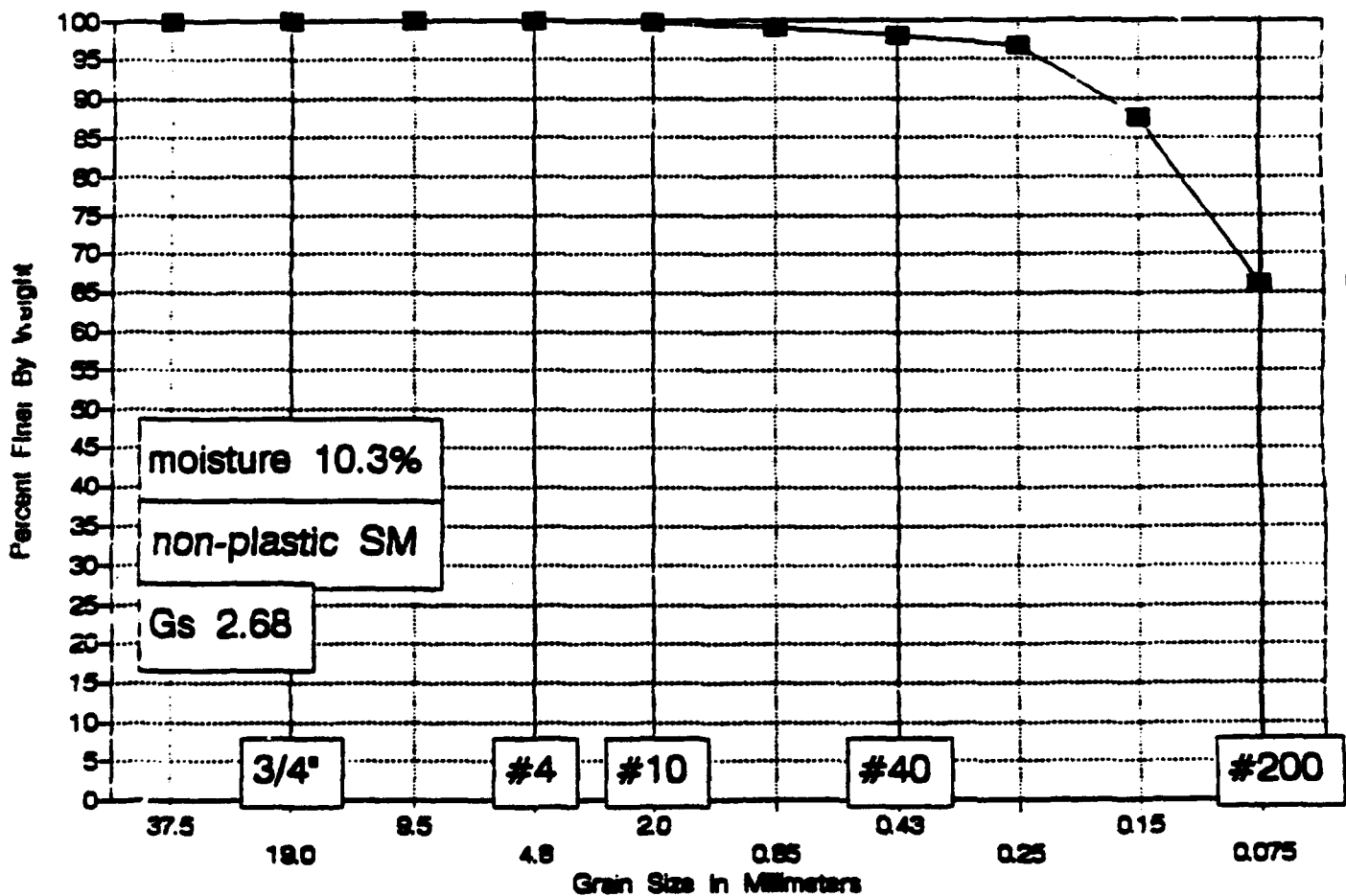


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		24	21	3	ML

# GRADATION CURVE

Site EP-01-022, Sample at 5 to 5.5 feet



AD-A282 374

TOOELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SNAUS 12/15

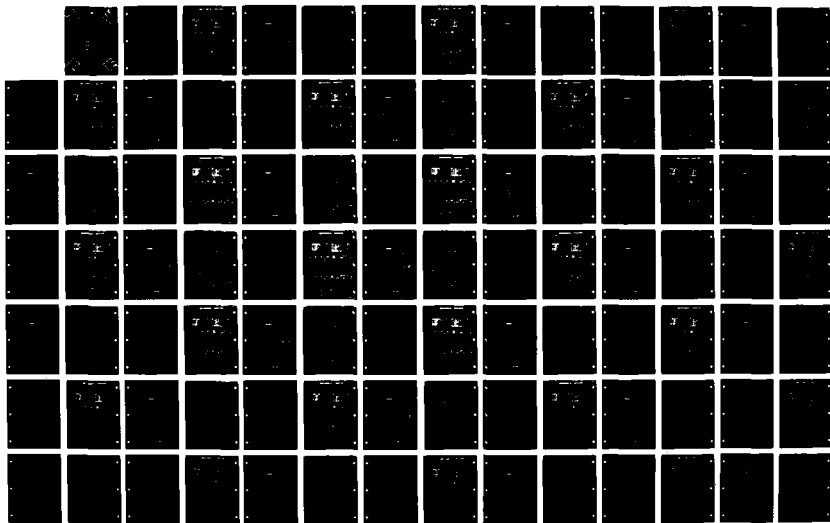
VOLUME 2 APPENDICES A - J REVISION(U) MONTGOMERY

WATSON WALNUT CREEK CA DEC 93 XA-USAEC

UNCLASSIFIED

DAAA15-90-D-0011

NL

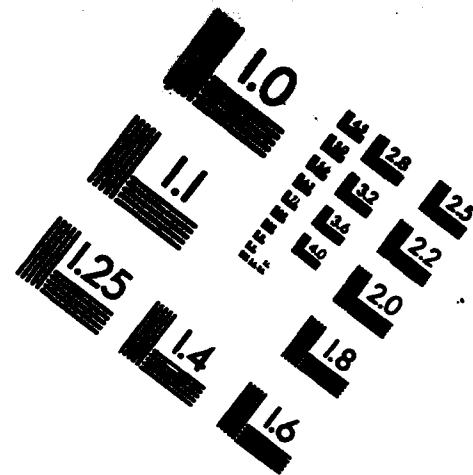
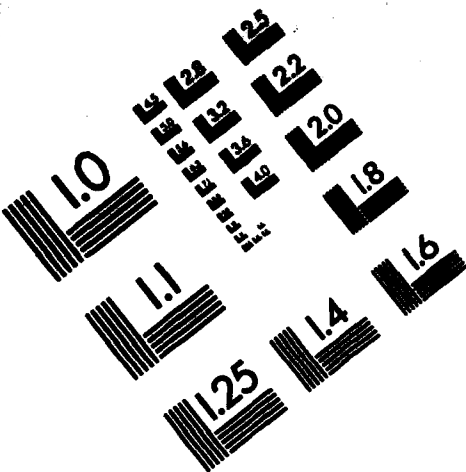




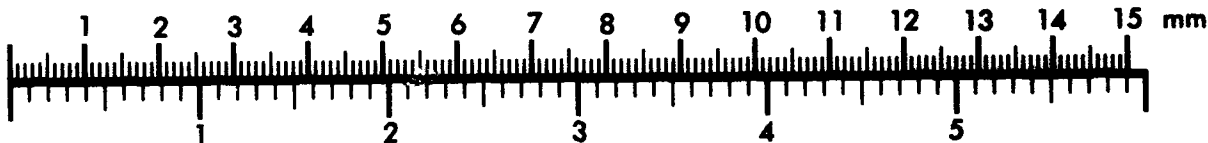
AIMM

Association for Information and Image Management

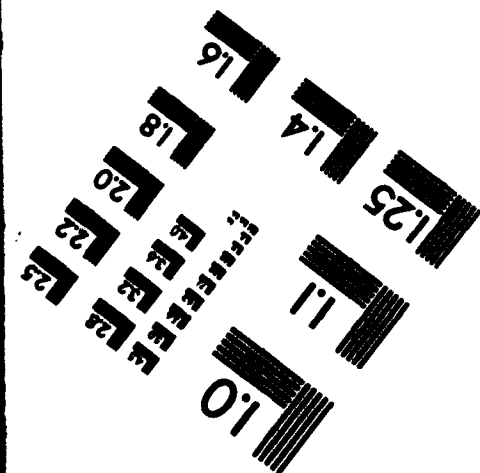
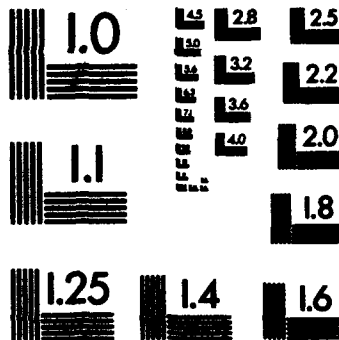
1100 Wayne Avenue, Suite 1100  
Silver Spring, Maryland 20910  
301/587-8202



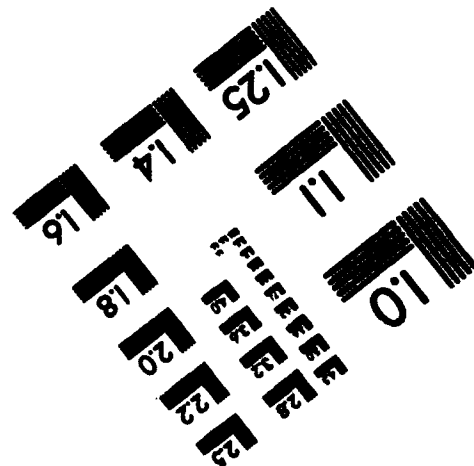
Centimeter



Inches



MANUFACTURED TO AIMM STANDARDS  
BY APPLIED IMAGE, INC.



James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-022  
Depth 5-5.5 feet

Wt soil and dish 230.3  
Dry soil & dish 218.8  
Dish 107.2

Moisture Content = 10.3

### SIEVE ANALYSIS

Dry weight of total sample= 111.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.3	99.73%	99.7	2.0
# 20	1.2	98.92%	98.9	0.85
# 40	2.1	98.12%	98.1	0.43
# 60	3.6	96.77%	96.8	0.25
# 100	13.9	87.54%	87.5	0.15
# 200	37.8	66.13%	66.1	0.075

# MECHANICAL ANALYSIS

SA

DATE 9/10/92

BY LAF

JOB NUMBER -6031

OWNER/CLIENT Immonteamery

LOCATION \_\_\_\_\_

BORING EP-01

SAMPLE 022

DEPTH 5-5.5

NUMBER OF RINGS	<u>bag</u>	DISH	<u>306</u>
WT. OF RINGS & WET SOIL	<u>1</u>	WT. OF DISH & WET SOIL	<u>230.3</u>
WT. OF RINGS	<u>/</u>	WT. OF DISH & DRY SOIL	<u>218.8</u>
WT. OF WET SOIL		WT. OF MOISTURE	<u>107.2</u>
FIELD DENSITY	<u>/</u>	WT. OF DISH	<u>107.2</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>10.3</u>

WASH SEIVE \_\_\_\_\_ DRY SEIVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		.3			
		#20		1.2			
		#40		2.1			
		#60		3.6			
		#100		13.9			
		#200		37.8			
		PAN					
		TOTAL					

# ATTENBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO. 6081  
 CLIENT/OWNER UNITED STATES ARMY  
 LOCATION EP-01 SAMPLE 022 DEPTH 5-55

## FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

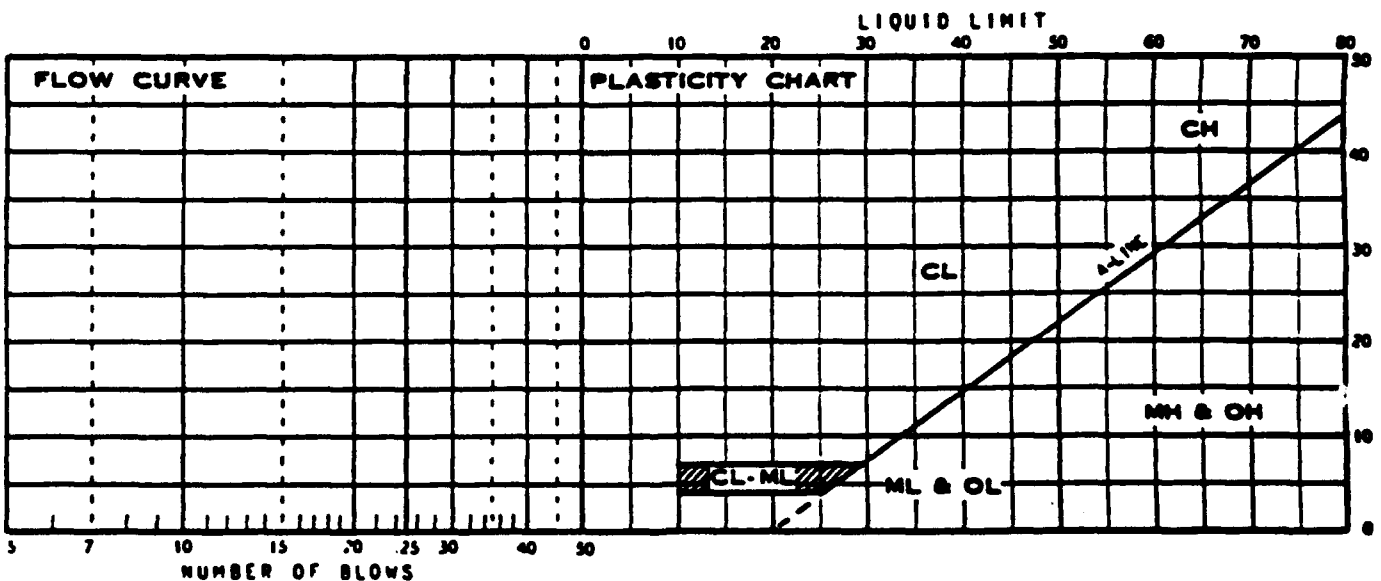
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

## PLASTIC LIMIT BY LOF. 9.14.92

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 129</u>	<u>AL 5</u>	<u>could not thread</u>			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT						

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 114</u>	<u>AL 98</u>	<u>AL 11</u>	<u>could not get adequate blow count</u>		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						

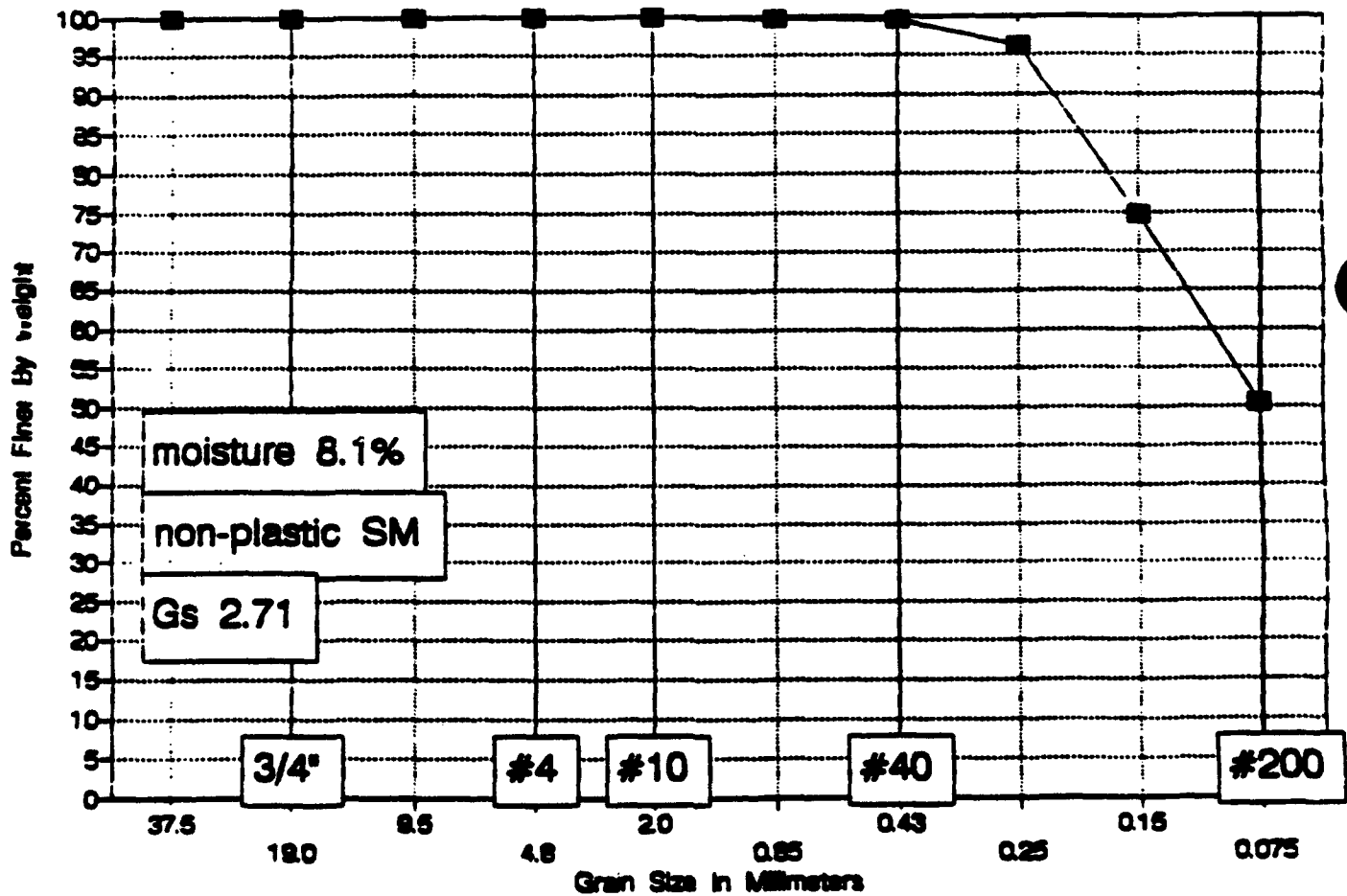


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site EP-01-025, Sample at 6.5 to 7 feet





James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-025  
Depth 6.5-7 feet

Wt soil and dish 222.3  
Dry soil & dish 213.8  
Dish 109

Moisture Content = 8.1

### SIEVE ANALYSIS

Dry weight of total sample= 104.8

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.1	99.90%	99.9	2.0
# 20	0.3	99.71%	99.7	0.85
# 40	0.5	99.52%	99.5	0.43
# 60	4	96.18%	96.2	0.25
# 100	26.5	74.71%	74.7	0.15
# 200	52	50.38%	50.4	0.075

# MECHANICAL ANALYSIS

5A

DATE 9/8/92 BY LAF  
 JOB NUMBER -6001 OWNER/CLIENT Jim Montgomery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 025 DEPTH 6.5-7'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>214</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>222.3</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>213.8</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>109.0</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>9.1</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		.1			
		#20		.3			
		#40		.5			
		#60		4.0			
		#100		26.5			
		#200		52.0			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. 6021  
CLIENT/OWNER mmmmmmmm  
LOCATION \_\_\_\_\_  
BORING SP-2 SAMPLE 225 DEPTH 6'-7"

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

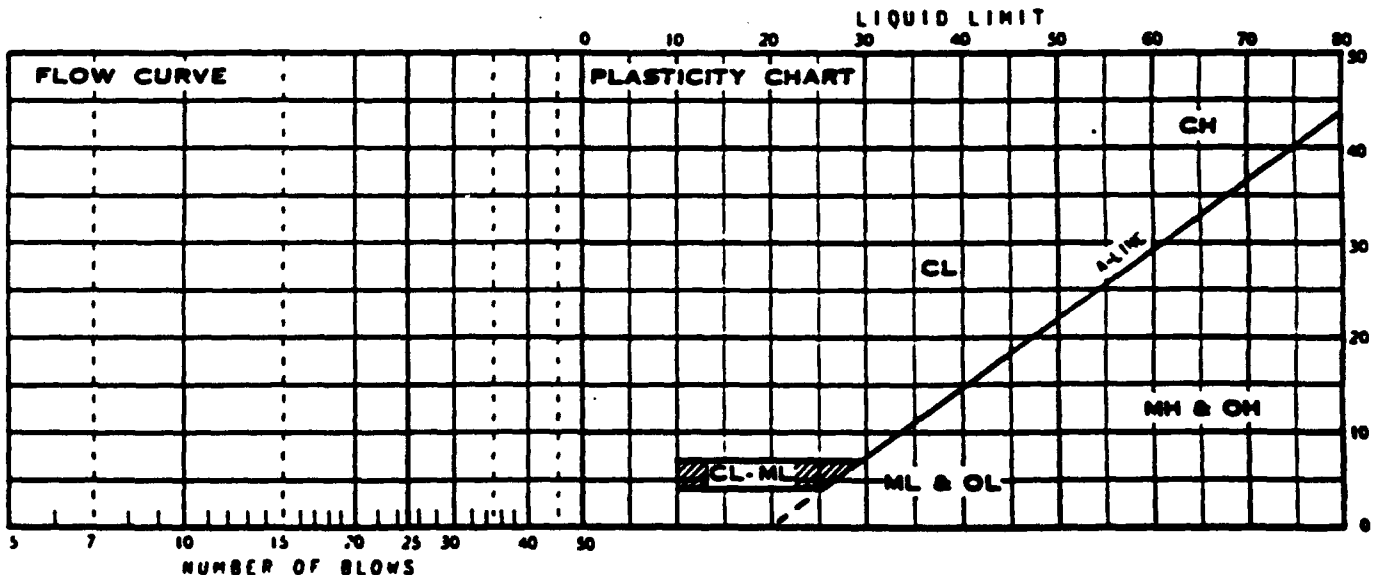
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9/1/92

DETERMINATION	1	2	3	4	5	6
DISH	<u>183</u>	<u>AL132</u>	<u>could not thread (sandy)</u>			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 77</u>	<u>AL 122</u>	<u>651</u>	<u>could not get adequate blow count (25)</u>		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						

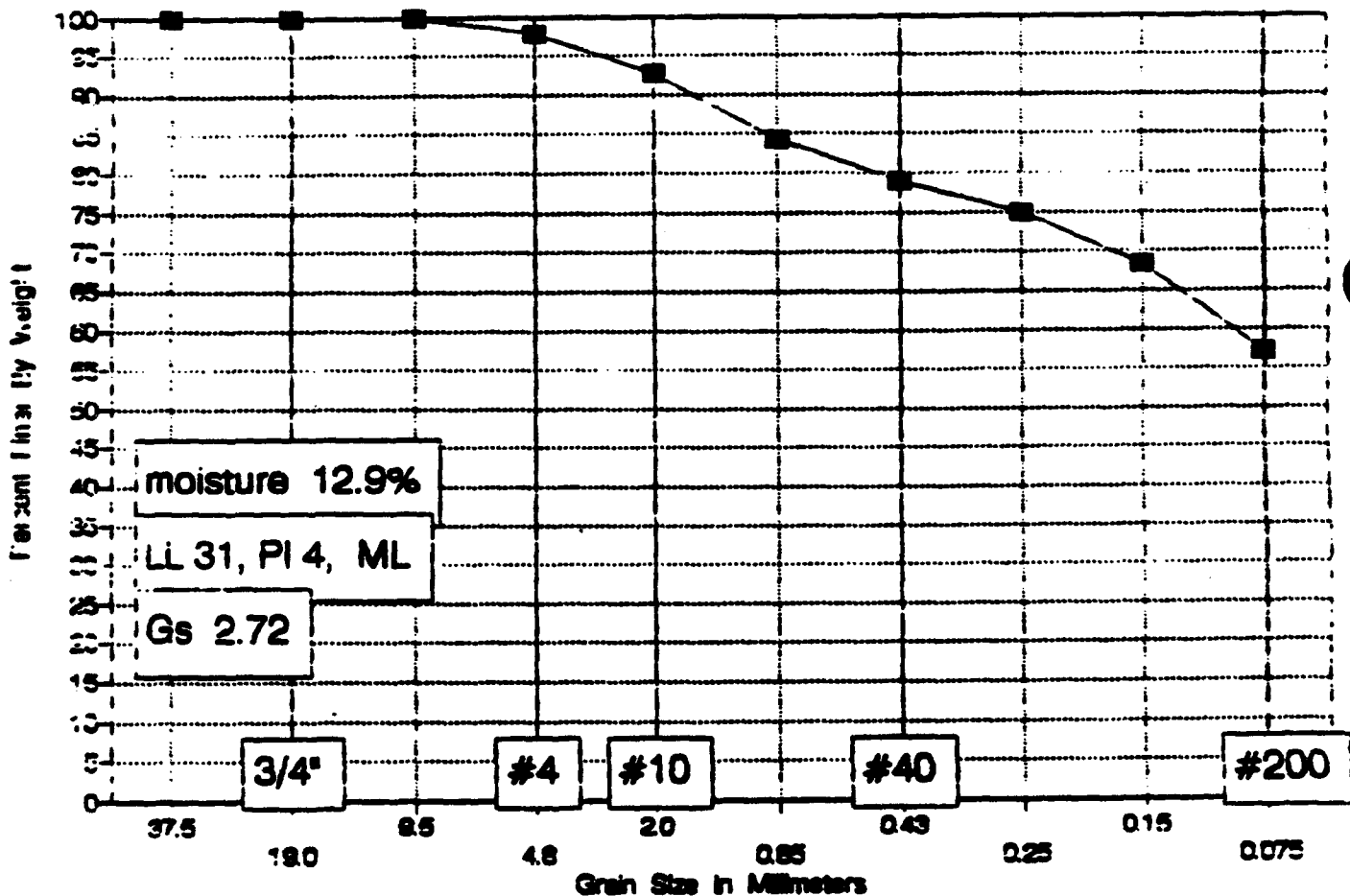


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site EP-01-027, Sample at 3.5 to 4 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	EP-01-027	Wt soil and dish	310.2
		Dry soil & dish	287.3
Depth	3.5-4 feet	Dish	109.7
Moisture Content =	12.9		

### SIEVE ANALYSIS

Dry weight of total sample= 177.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	3.76	97.88%	97.9	4.8
# 10	13.05	92.65%	92.7	2.0
# 20	28.13	84.16%	84.2	0.85
# 40	37.42	78.93%	78.9	0.43
# 60	44.52	74.93%	74.9	0.25
# 100	56.27	68.32%	68.3	0.15
# 200	76.06	57.17%	57.2	0.075

# MECHANICAL ANALYSIS

SA

DATE 2/4/22 BY LIF  
 JOB NUMBER -6051 OWNER/CLIENT Jim Montgomery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 027 DEPTH 35-4'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>208</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>310.2</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>287.3</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>109.7</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>12.9</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		376		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		13.05			
		#20		28.13			
		#40		37.42			
		#60		44.52			
		#100		56.27			
		#200		76.06			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO. - 6051

CLIENT/OWNER Jim Montgomery

LOCATION

BORING EP-01 SAMPLE 027 DEPTH 25'

## FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

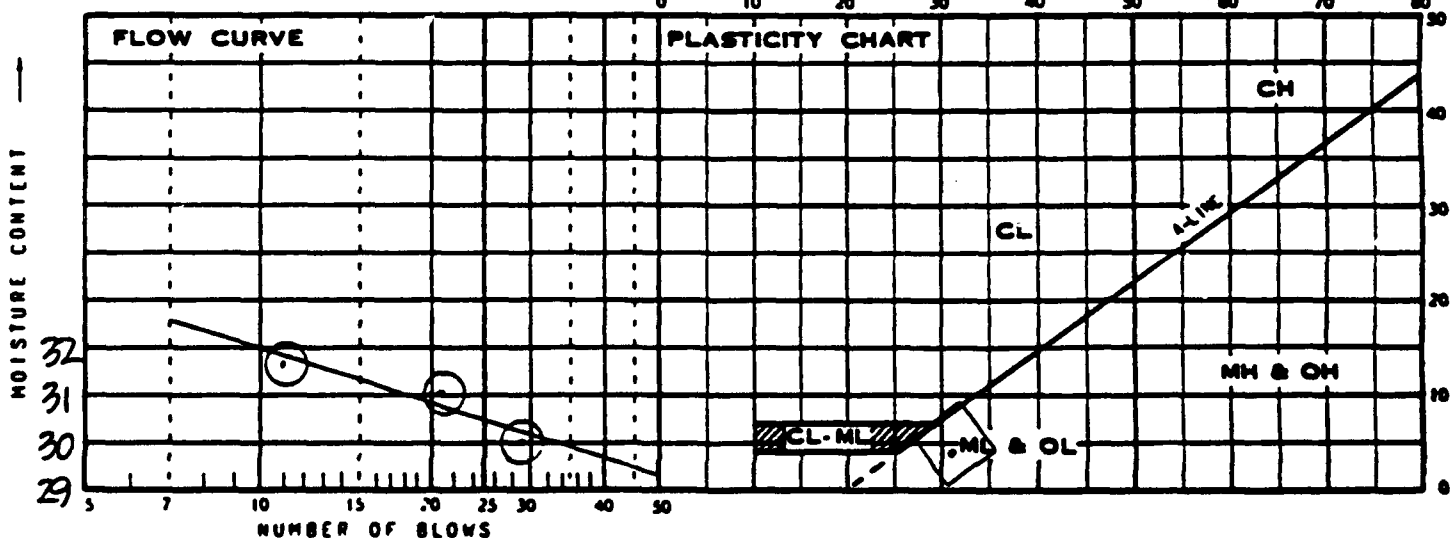
## PLASTIC LIMIT BY LAF 9.992

DETERMINATION	1	2	3	4	5	6
DISH	AL117	AL124				
WT OF DISH + WET SOIL	13.74	15.32				
WT OF DISH + DRY SOIL	11.12	12.41				
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT	26.95	26.43	X=27			

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL93	AL100	651			
NUMBER OF BLOWS	29	21	11			
WT OF DISH + WET SOIL	10.02	11.96	10.92			
WT OF DISH + DRY SOIL	8.03	9.46	8.63			
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT	30.02	31.02	31.67			

## LIQUID LIMIT

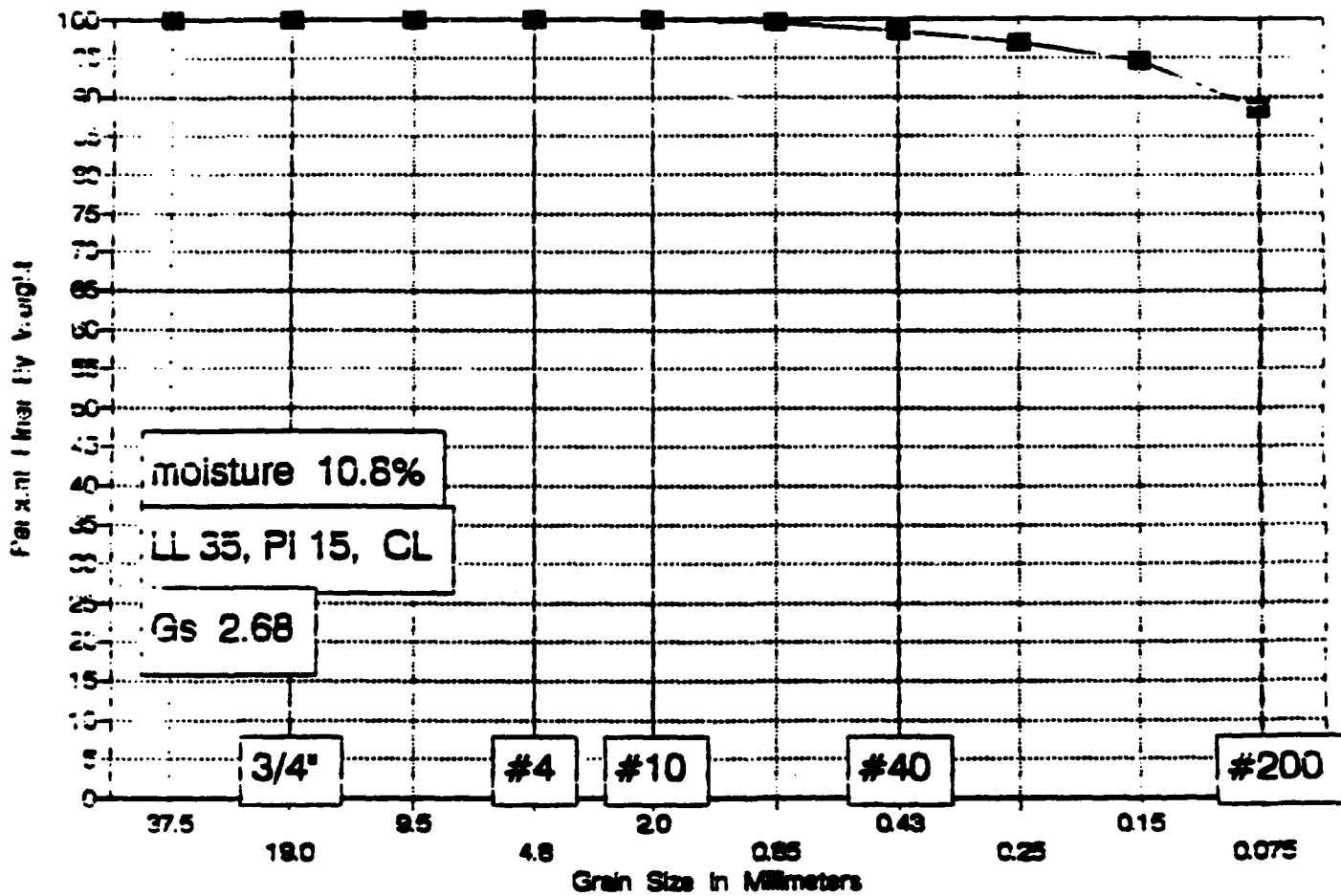


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		31	27	4	ML

# GRADATION CURVE

Site EP-01-032, Sample at 5 to 5.5 feet





James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-032  
Depth, 5-5.5 feet

Wt soil and dish 253.8  
Dry soil & dish 239.6  
Dish 108.2

Moisture Content = 10.8

#### SIEVE ANALYSIS

Dry weight of total sample= 131.4

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.1	99.92%	99.9	2.0
# 20	0.7	99.47%	99.5	0.85
# 40	2	98.48%	98.5	0.43
# 60	4.1	96.88%	96.9	0.25
# 100	6.9	94.75%	94.7	0.15
# 200	15.1	88.51%	88.5	0.075

# MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF  
 JOB NUMBER -6081 OWNER/CLIENT JRM Montgomery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 032 DEPTH 5-5.5'

NUMBER OF RINGS	bag	DISH	315
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	253.8
WT. OF RINGS		WT. OF DISH & DRY SOIL	239.6
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	100.2
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	10.3

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		0.1			
		#20		0.7			
		#40		2.0			
		#60		4.1			
		#100		6.9			
		#200		15.1			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING EP-01 SAMPLE 032 DEPTH 5-5.5

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

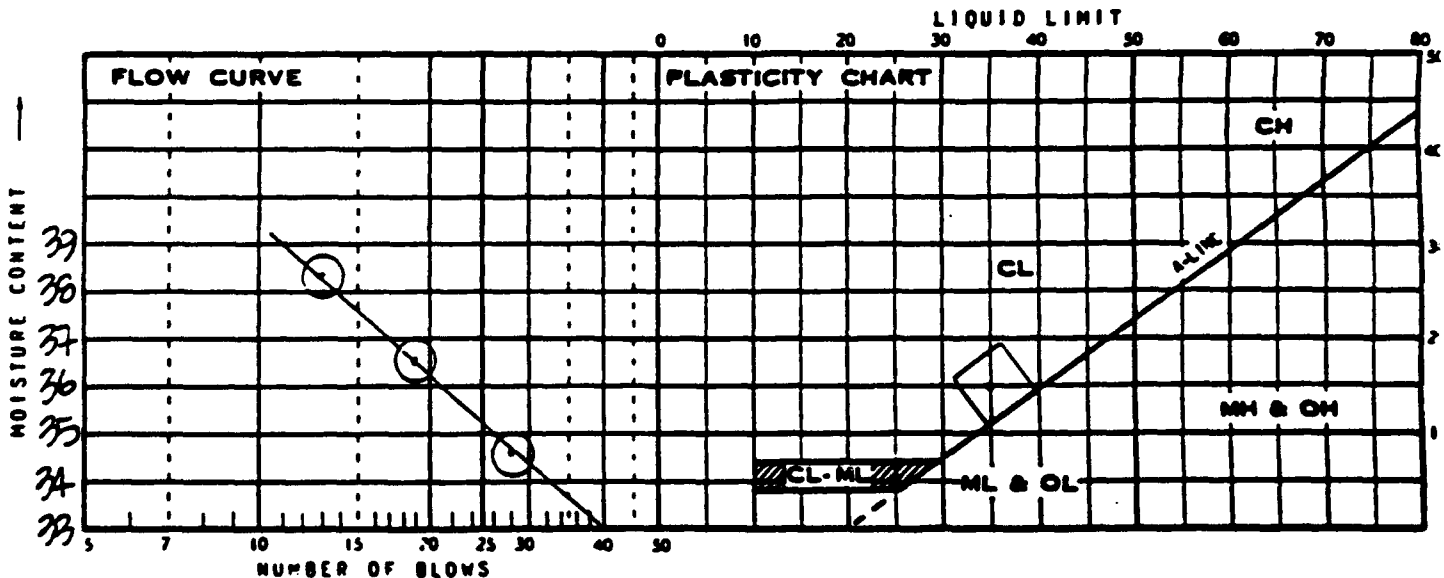
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY UAE-9.8.92

DETERMINATION	1	2	3	4	5	6
DISH	AL120	AL108				
WT OF DISH + WET SOIL	15.52	19.51				
WT OF DISH + DRY SOIL	13.18	16.51				
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT	19.86	19.85	$\bar{x}=20$			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL132	AL129	AL125			
NUMBER OF BLOWS	28	19	13			
WT OF DISH + WET SOIL	11.26	10.98	14.68			
WT OF DISH + DRY SOIL	8.72	8.34	11.00			
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT	34.70	36.60	38.33			

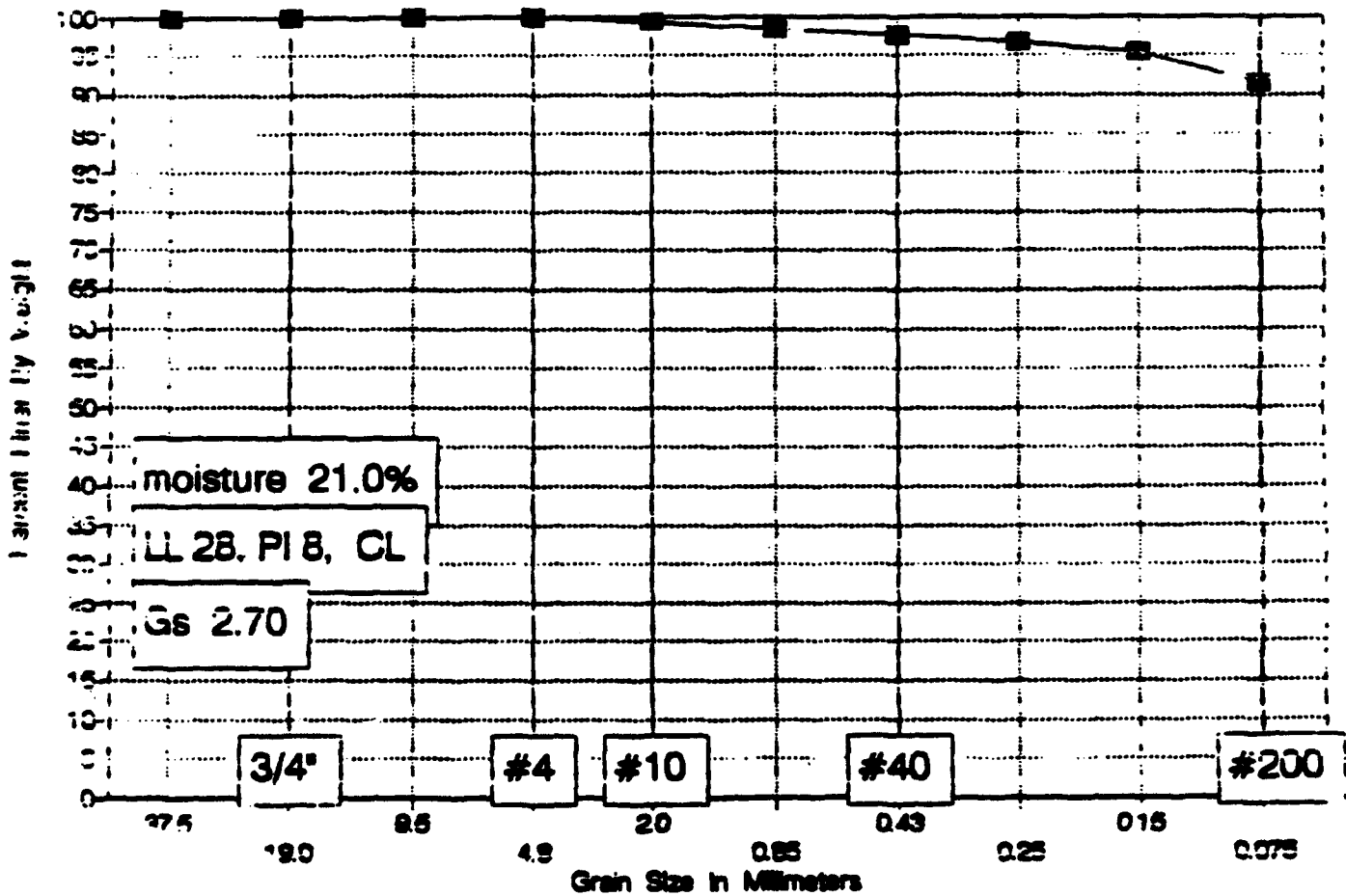


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		35	20	15	CL

# GRADATION CURVE

Site EP-01-037, Sample at 6.5 to 7 feet



James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-037

Depth 6.5-7 feet

Moisture Content = 21.0

Wt soil and dish	286.1
Dry soil & dish	255.4
Dish	109.1

### SIEVE ANALYSIS

Dry weight of total sample= 146.3

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0.2	99.86%	99.9	4.8
# 10	1	99.32%	99.3	2.0
# 20	2.4	98.36%	98.4	0.85
# 40	3.5	97.61%	97.6	0.43
# 60	4.8	96.72%	96.7	0.25
# 100	6.8	95.35%	95.4	0.15
# 200	12.5	91.46%	91.5	0.075

# MECHANICAL ANALYSIS

DATE 9/14/92 BY LAF  
 JOB NUMBER -6021 OWNER/CLIENT Jim Montsornery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 037 DEPTH 6.5-7'

NUMBER OF RINGS	<u>12.7</u>	DISH	<u>214</u>
WT. OF RINGS & WET SOIL	<u>0</u>	WT. OF DISH & WET SOIL	<u>286.1</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>255.4</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>109.1</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>21.0</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		<u>0</u>		
		#4		<u>.2</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>1.0</u>			
		#20		<u>2.4</u>			
		#40		<u>3.5</u>			
		#60		<u>4.8</u>			
		#100		<u>6.8</u>			
		#200		<u>12.5</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING EP-01 SAMPLE 03 DEPTH 55

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

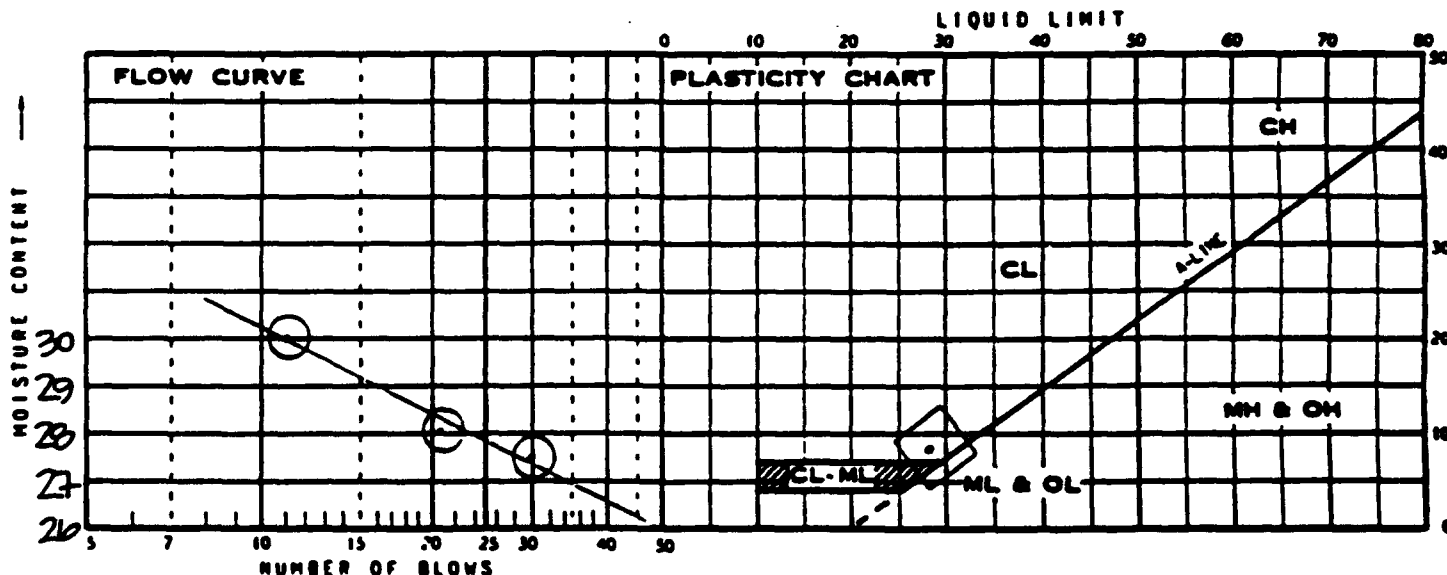
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE. 9/16/92

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL123</u>	<u>AL104</u>				
WT OF DISH + WET SOIL	<u>18.16</u>	<u>18.48</u>				
WT OF DISH + DRY SOIL	<u>15.36</u>	<u>15.56</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT	<u>20.06</u>	<u>20.62</u>	<u>20</u>			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL08</u>	<u>AL07</u>	<u>AL19</u>			
NUMBER OF BLOWS	<u>30</u>	<u>21</u>	<u>11</u>			
WT OF DISH + WET SOIL	<u>10.73</u>	<u>10.98</u>	<u>11.06</u>			
WT OF DISH + DRY SOIL	<u>8.72</u>	<u>8.88</u>	<u>8.83</u>			
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT	<u>27.46</u>	<u>28.07</u>	<u>30.01</u>			

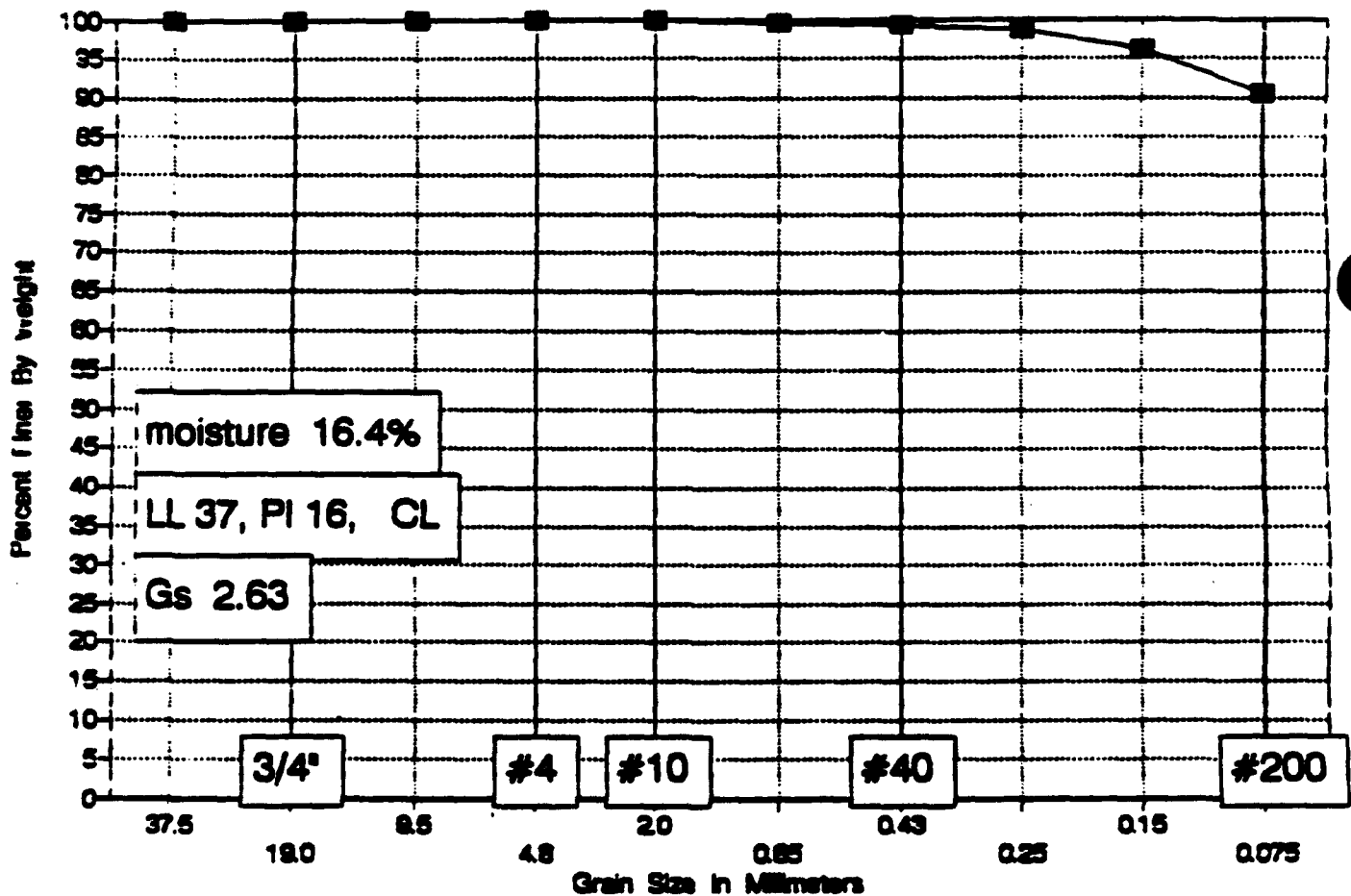


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		<u>28</u>	<u>20</u>	<u>8</u>	<u>CL</u>

# GRADATION CURVE

Site EP-01-044, Sample at 5 to 5.5 feet





James M. Montgomery  
P.O. 2942-0130

Site ID	EP-01-044	Wt soil and dish	248.7
Depth	5-5.5 feet	Dry soil & dish	229.3
		Dish	110.7
Moisture Content =	16.4		

### SIEVE ANALYSIS

Dry weight of total sample= 118.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.2	99.83%	99.8	2.0
# 20	0.5	99.58%	99.6	0.85
# 40	0.8	99.33%	99.3	0.43
# 60	1.6	98.65%	98.7	0.25
# 100	4.5	96.21%	96.2	0.15
# 200	11.1	90.64%	90.6	0.075

# MECHANICAL ANALYSIS

SA

DATE 9/8/72 BY LAF  
 JOB NUMBER -6081 OWNER/CLIENT Immortsonery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 044 DEPTH 5-5.5'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>205</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>246.7</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>229.3</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>110.7</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>16.4</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCU WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		1.2			
		#20		1.5			
		#40		1.8			
		#60		1.6			
		#100		4.5			
		#200		11.1			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING

- 5081

JM MONTGOMERY

EP-01 SAMPLE 24.1 DEPTH 3.55

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

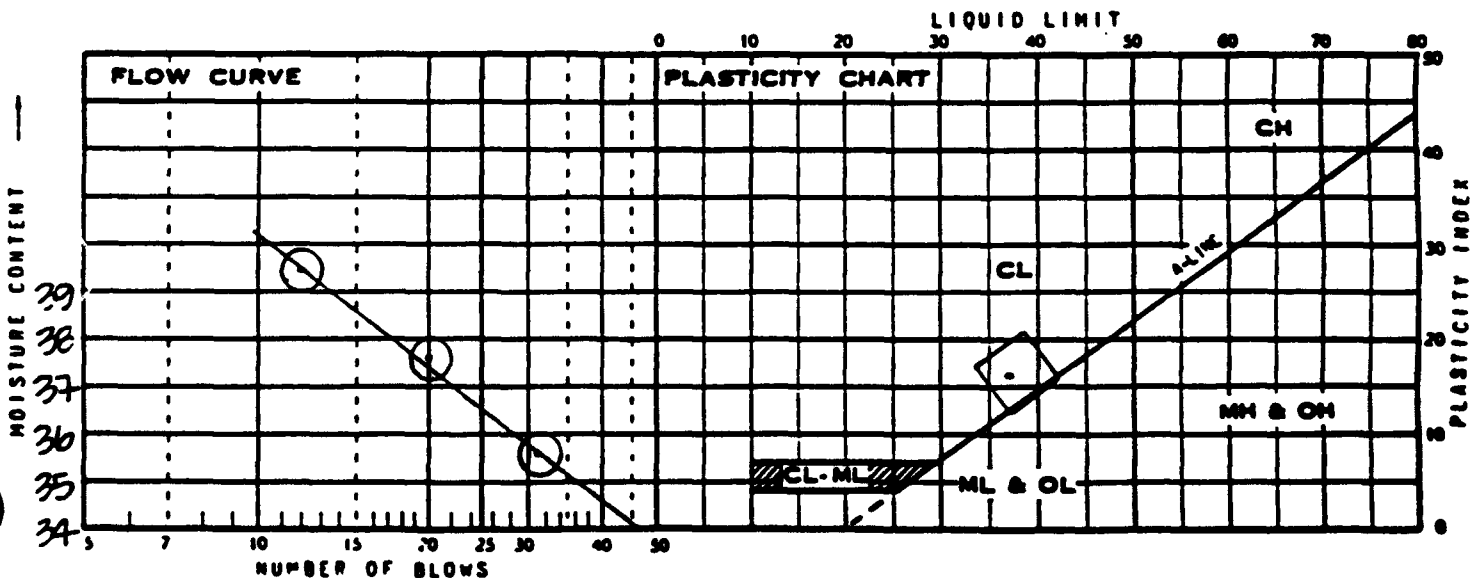
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY UE. 9/1/92

DETERMINATION	1	2	3	4	5	6
DISH	A6	19				
WT OF DISH + WET SOIL	13.44	13.39				
WT OF DISH + DRY SOIL	11.36	11.30				
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT	20.88	21.1	$\bar{x}=21$			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL93	AL17	AL120			
NUMBER OF BLOWS	31	20	12			
WT OF DISH + WET SOIL	11.41	12.56	11.77			
WT OF DISH + DRY SOIL	9.78	9.51	9.84			
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT	35.64	37.61	39.38			

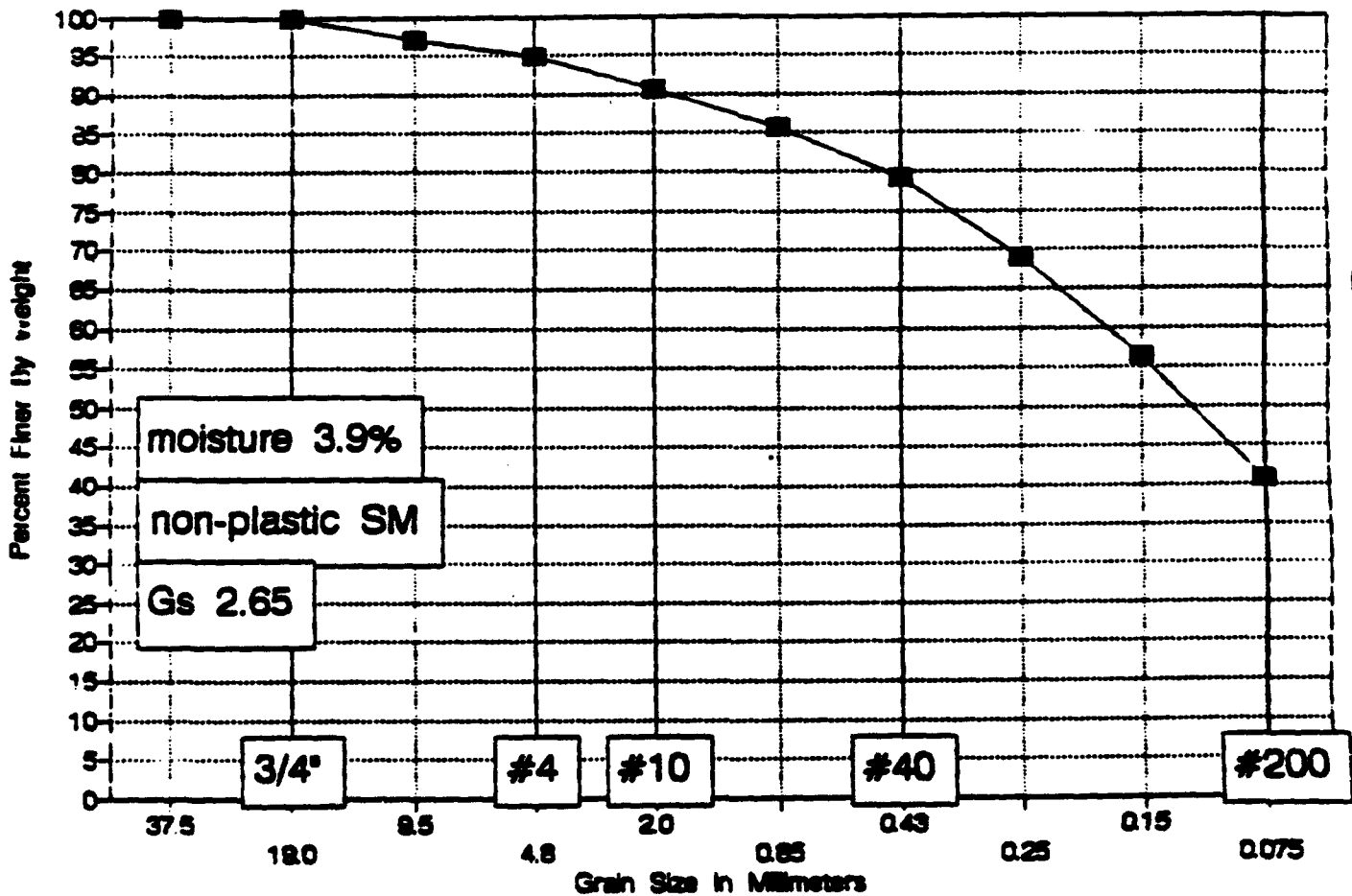


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		37	21	16	CL

# GRADATION CURVE

Site EP-01-049, Sample at 0 to 1 feet



James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-049

Wt soil and dish 216.7

Dry soil & dish 212.6

Depth 0-1 feet

Dish 107.9

Moisture Content = 3.9

### SIEVE ANALYSIS

Dry weight of total sample= 104.7

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	3	97.13%	97.1	9.5
# 4	5.3	94.94%	94.9	4.8
# 10	9.8	90.64%	90.6	2.0
# 20	14.9	85.77%	85.8	0.85
# 40	21.7	79.27%	79.3	0.43
# 60	32.5	68.96%	69.0	0.25
# 100	45.8	56.26%	56.3	0.15
# 200	62.1	40.69%	40.7	0.075

# MECHANICAL ANALYSIS

SA

DATE 9/3/92 BY LAF  
 JOB NUMBER -6081 OWNER/CLIENT Jm montgomery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 049 DEPTH 0-1'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>307</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>216.7</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>212.6</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>107.9</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>3.9</u>

WASH SIEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		<u>0</u>		
		3/8"		<u>30</u>		
		#4		<u>53</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>9.8</u>			
		#20		<u>14.9</u>			
		#40		<u>21.7</u>			
		#60		<u>32.5</u>			
		#100		<u>45.8</u>			
		#200		<u>62.1</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING EP-01 SAMPLE Q42 DEPTH 0-1'

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

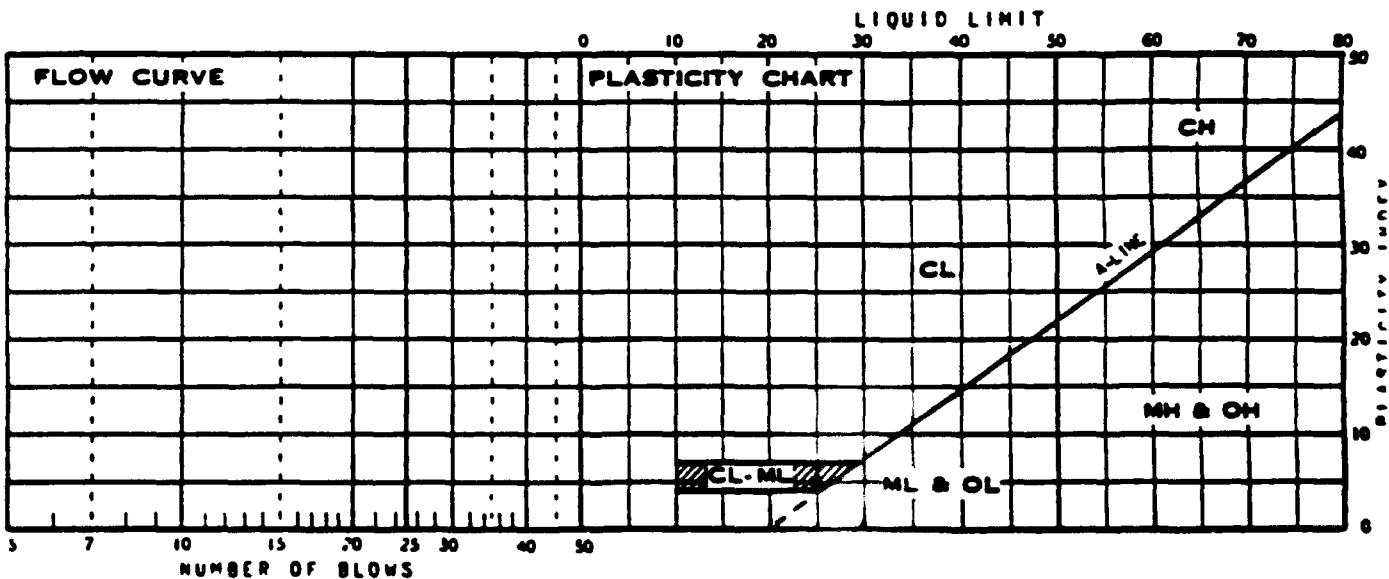
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF. 9.982

DETERMINATION	1	2	3	4	5	6
DISH	13	20	COULD NOT THREAD			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL 109	183	9A	COULD NOT GET adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT						

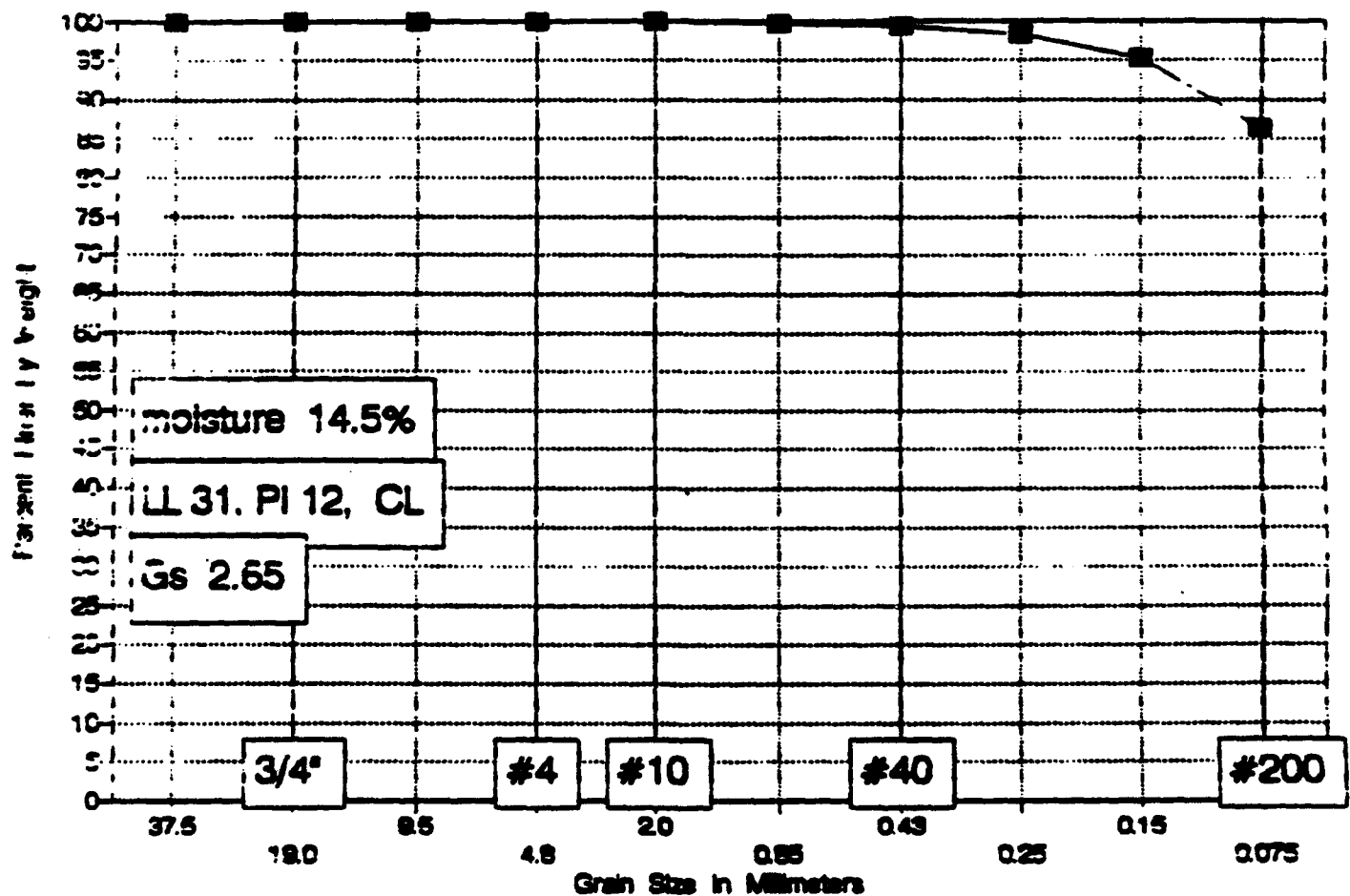


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					NP

**Site EP-01-050, Sample at 4.5 to 5 feet**

**Site EP-01-050, Sample at 4.5 to 5 feet**





James M. Montgomery  
P.C. 4942-0130

Site ID	EP-01-050	Wt soil and dish	229.4
		Dry soil & dish	214
Depth	4.5-5 feet	Dish	107.7
Moisture Content =	14.5		

#### SIEVE ANALYSIS

Dry weight of total sample= 106.3

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.05	99.95%	100.0	2.0
# 20	0.2	99.81%	99.8	0.85
# 40	0.6	99.44%	99.4	0.43
# 60	1.8	98.31%	98.3	0.25
# 100	5.1	95.20%	95.2	0.15
# 200	14.3	86.55%	86.5	0.075

# MECHANICAL ANALYSIS

3A

DATE 9/14/92 BY LJF  
 JOB NUMBER -6081 OWNER/CLIENT JIM MONTGOMERY  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 050 DEPTH 4.5-5'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>308</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>229.4</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>214.0</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>107.7</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>4.5</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		5				
		1-1/2				
		3/4				
		3/8				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		0.5			
		#20		.2			
		#40		.6			
		#60		1.8			
		#100		5.1			
		#200		14.3			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING EP-01 SAMPLE 100 DEPTH 15-2

FIELD DENSITY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

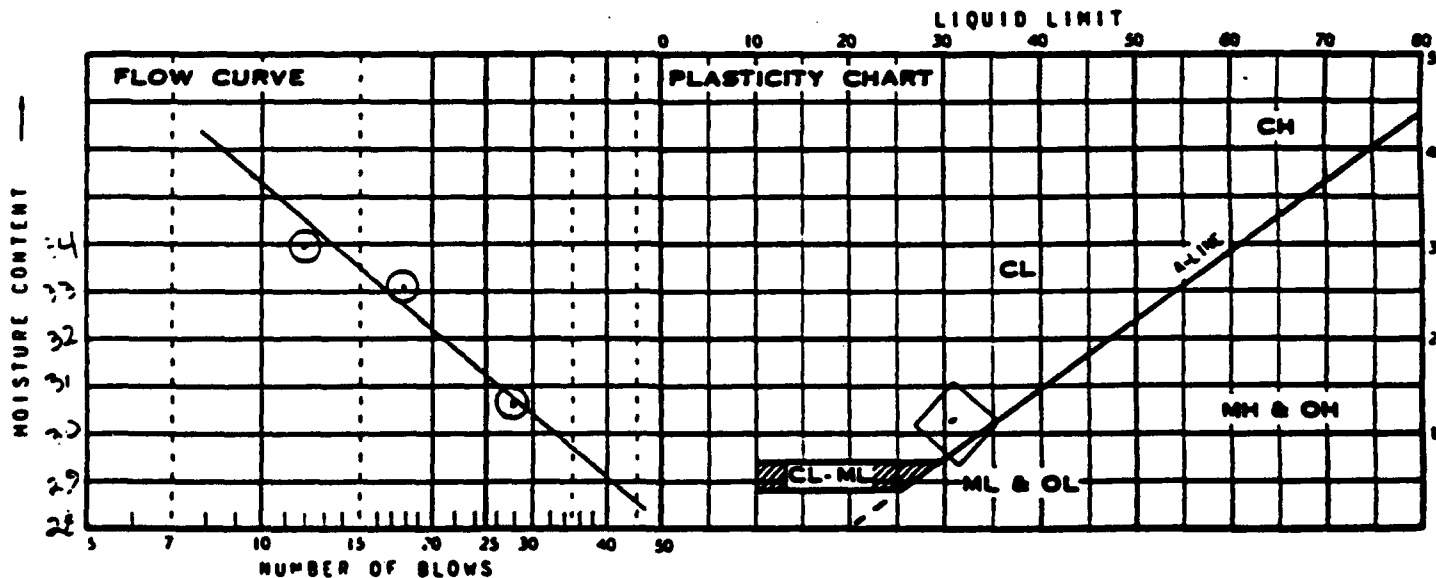
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY 91.91.92

DETERMINATION	1	2	3	4	5	6
DISH	AL110	AL96				
WT OF DISH + WET SOIL	10.23	14.16				
WT OF DISH + DRY SOIL	8.86	12.15				
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT	18.36	18.78	AV=19			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL122	A-6	651			
NUMBER OF BLOWS	28	18	12			
WT OF DISH + WET SOIL	11.83	11.51	10.72			
WT OF DISH + DRY SOIL	9.39	9.00	8.36			
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT	30.54	33.03	33.91			

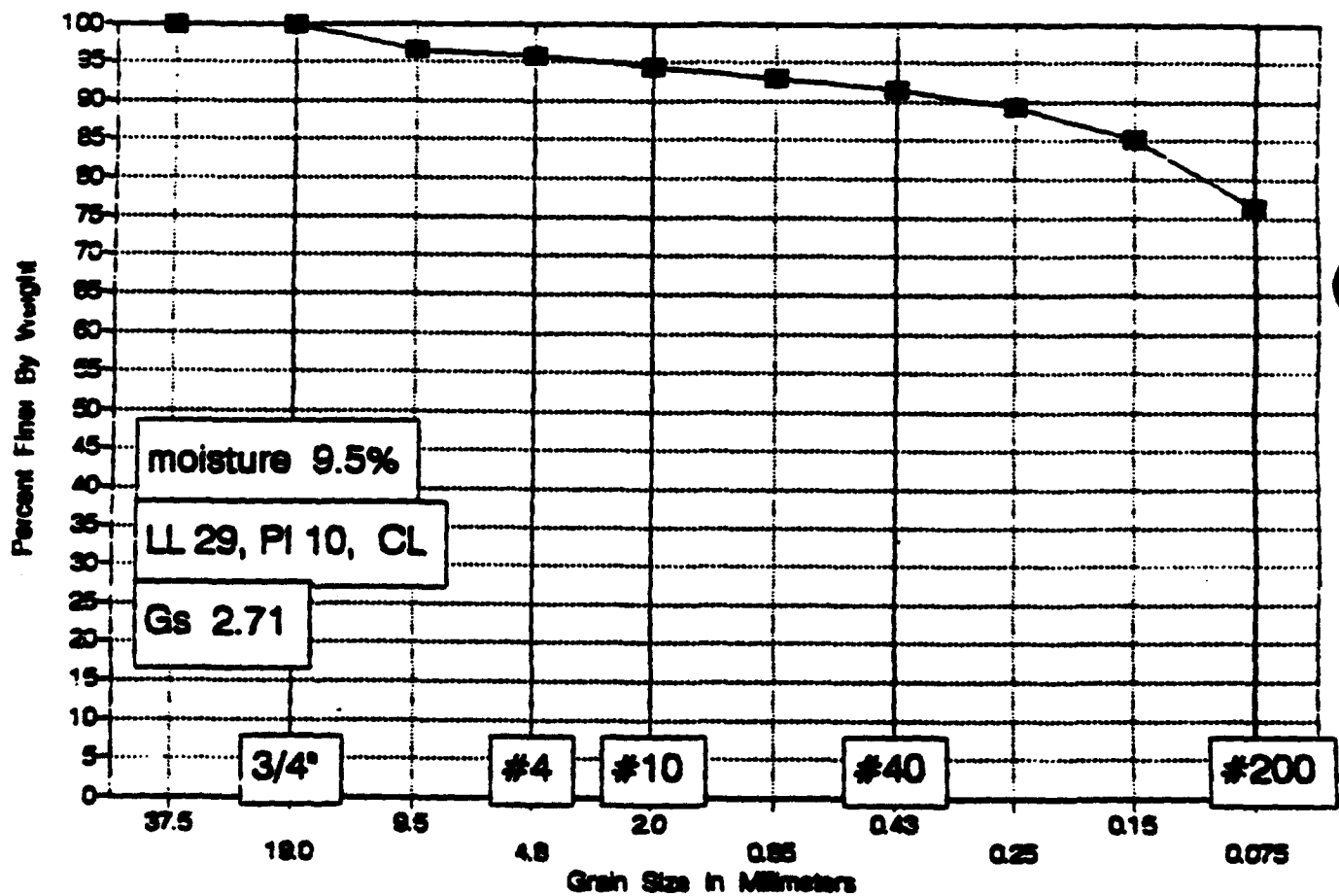


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		31	19	12	CL

# GRADATION CURVE

Site EP-01-052, Sample at 2.5 to 3 feet



James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-052  
Depth 2.5-3 feet.

Moisture Content = 9.5

Wt soil and dish 257  
Dry soil & dish 244.2  
Dish 110.1

### SIEVE ANALYSIS

Dry weight of total samples 134.1

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	4.7	96.50%	96.5	9.5
# 4	5.7	95.75%	95.7	4.8
# 10	7.7	94.26%	94.3	2.0
# 20	9.5	92.92%	92.9	0.85
# 40	11.5	91.42%	91.4	0.43
# 60	14.3	89.34%	89.3	0.25
# 100	20	85.09%	85.1	0.15
# 200	31.7	76.36%	76.4	0.075

# MECHANICAL ANALYSIS

DATE 9/8/92 BY LIF  
 JOB NUMBER -6051 OWNER/CLIENT Jm montgomery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 052 DEPTH 2.5-3'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>123</u>
WT. OF RINGS & WET SOL		WT. OF DISH & WET SOL	<u>257.0</u>
WT. OF RINGS		WT. OF DISH & DRY SOL	<u>244.2</u>
WT. OF WET SOL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>110.1</u>
DRY DENSITY		WT. OF DRY SOL	
		FIELD MOISTURE CONTENT	<u>9.5</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		4.7		
		#4		5.7		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCU. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		7.7			
		#20		9.5			
		#40		11.5			
		#60		14.3			
		#100		20.0			
		#200		31.7			
		PAN					
		TOTAL					

LABORATORY CLASSIFICATION

LOCATION

BORING EP-C SAMPLE CE DEPTH 25.0

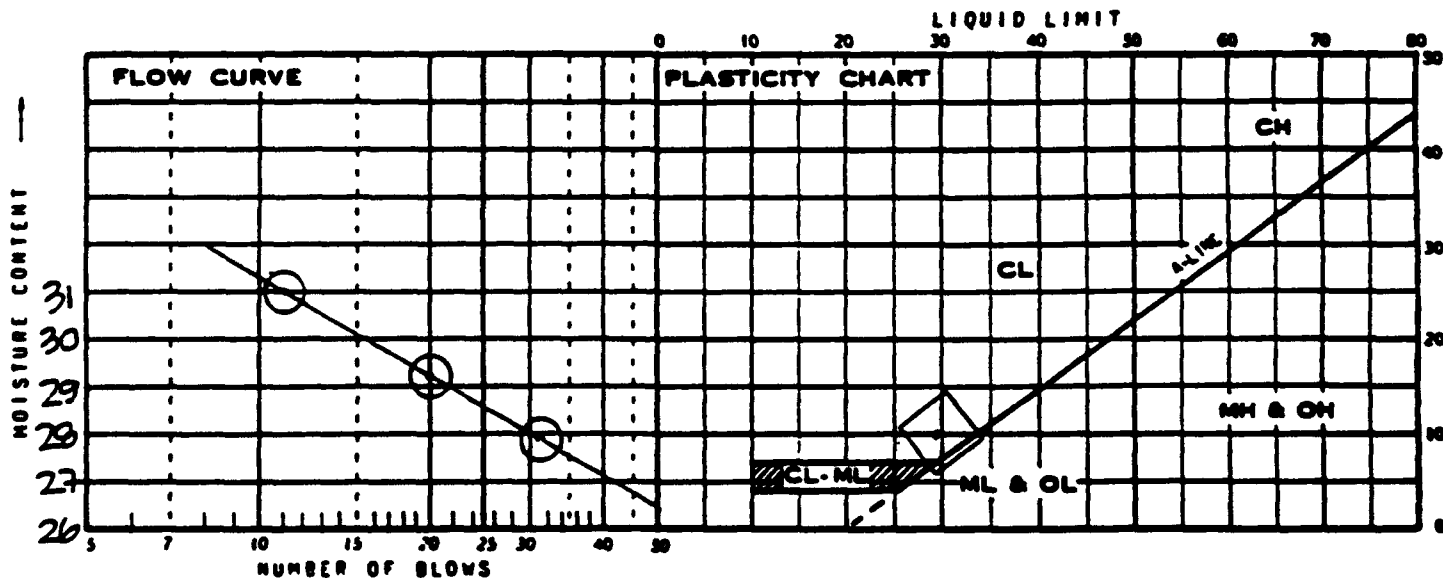
DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	_____	_____
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	_____	_____
WT OF MOISTURE		
WT OF DISH	_____	_____
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

DETERMINATION	1	2	3	4	5	6
DISH	AL 5	AL 114				
WT OF DISH + WET SOIL	18.92	21.07				
WT OF DISH + DRY SOIL	16.11	17.92	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	—	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	19.10	19.07	$\bar{x} = 19$			

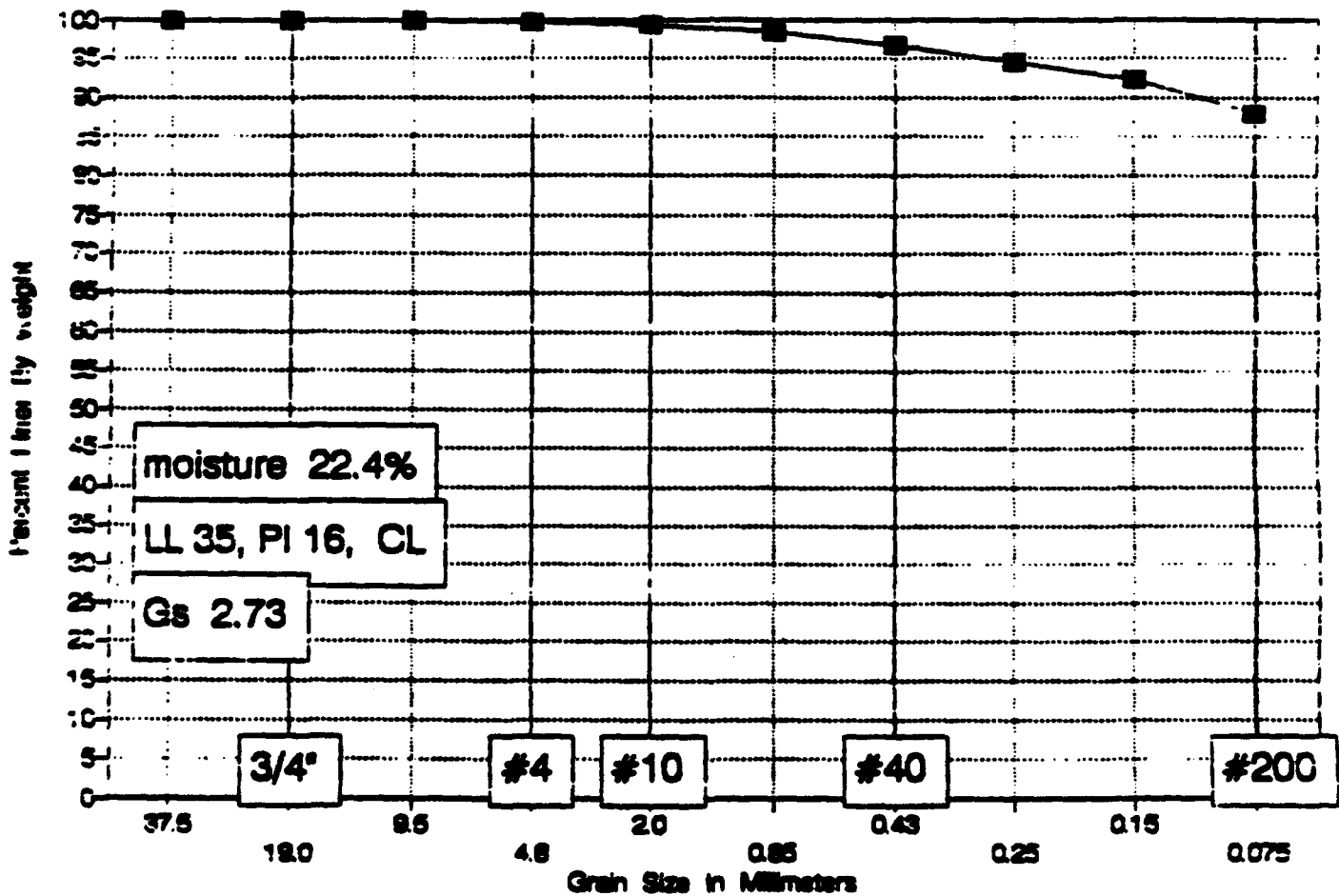
DETERMINATION	1	2	3	4	5	6
DISH	AL 108	AL 70	AL 171			
NUMBER OF BLOWS	31	20	11			
WT OF DISH + WET SOIL	11.85	13.13	11.75			
WT OF DISH + DRY SOIL	9.57	10.48	9.30	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	27.91	29.19	31.01			



DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		29	19	10	CL

# GRADATION CURVE

Site EP-01-053, Sample at 6.5 to 7 feet





James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-053

Depth 6.5-7, feet

Moisture Content = 22.4

Wt soil and dish	209.2
Dry soil & dish	191
Dish	109.6

### SIEVE ANALYSIS

Dry weight of total sample= 81.4

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0.2	99.75%	99.8	4.8
# 10	0.6	99.26%	99.3	2.0
# 20	1.3	98.40%	98.4	0.85
# 40	2.6	96.81%	96.8	0.43
# 60	4.5	94.47%	94.5	0.25
# 100	6.3	92.26%	92.3	0.15
# 200	9.8	87.96%	88.0	0.075

# MECHANICAL ANALYSIS

DATE 9/14/92 BY LAF  
 JOB NUMBER -603 OWNER/CLIENT Jm Montzomery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 053 DEPTH 6.5-2'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>215</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>209.2</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>191.0</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>109.6</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>22.4</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		<u>0</u>		
		#4		<u>.2</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>.6</u>			
		#20		<u>1.3</u>			
		#40		<u>2.6</u>			
		#60		<u>4.5</u>			
		#100		<u>6.3</u>			
		#200		<u>9.8</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING

- 6081

JM MONTGOMERY

EP-01 SAMPLE 053 DEPTH 0.5-1

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

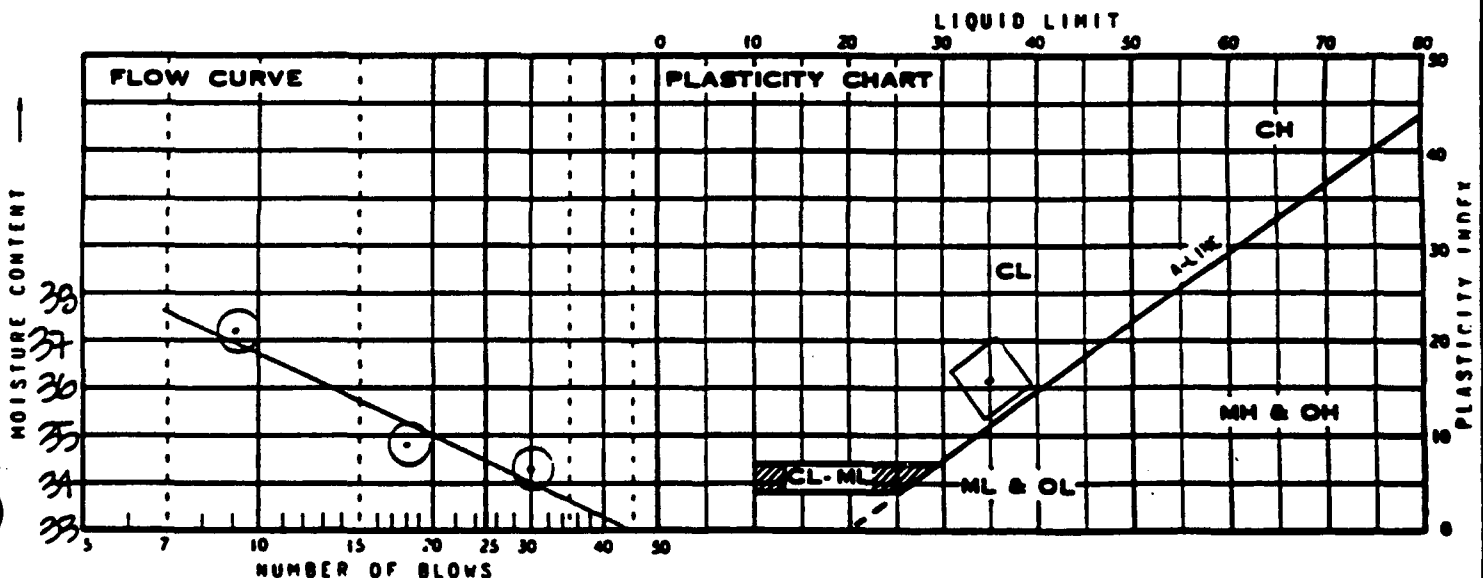
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF. 9.1692

DETERMINATION	1	2	3	4	5	6
DISH	AL112	A-7				
WT OF DISH + WET SOIL	10.80	14.05				
WT OF DISH + DRY SOIL	9.30	12.00				
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT	18.99	19.34	$\bar{x} = 19$			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL127	AL117	AL4			
NUMBER OF BLOWS	30	13	9			
WT OF DISH + WET SOIL	11.32	11.89	11.61			
WT OF DISH + DRY SOIL	9.08	9.18	8.84			
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT	34.36	34.83	37.23			

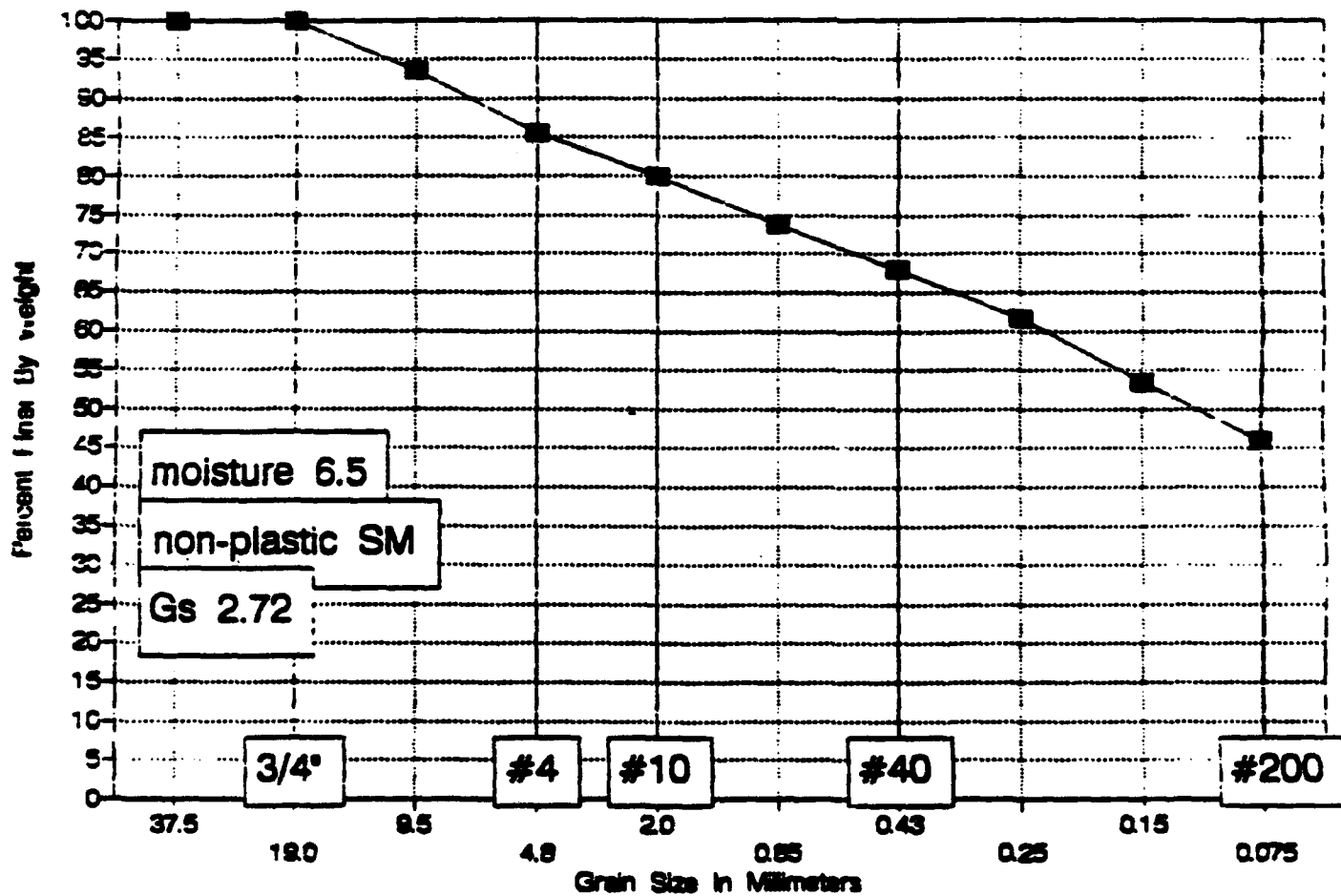


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		35	19	16	CL

# GRADATION CURVE

Site EP-01-058, Sample at 5 to 5.5 feet



James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-058  
Depth 5-5.5 feet

Wt soil and dish 268.6  
Dry soil & dish 259  
Dish 112

Moisture Content = 6.5

#### SIEVE ANALYSIS

Dry weight of total sample= 147

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	9.4	93.61%	93.6	9.5
# 4	21.3	85.51%	85.5	4.8
# 10	29.4	80.00%	80.0	2.0
# 20	38.4	73.88%	73.9	0.85
# 40	46.9	68.10%	68.1	0.43
# 60	56.4	61.63%	61.6	0.25
# 100	68.5	53.40%	53.4	0.15
# 200	79.4	45.99%	46.0	0.075

# MECHANICAL ANALYSIS

SA

DATE 9/3/92 BY IAF  
 JOB NUMBER -6031 OWNER/CLIENT Jim Montgomery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 059 DEPTH 5-5.5'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>300</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>260.6</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>259.0</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>12.0</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>6.5</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		9.4		
		#4		21.3		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		29.4			
		#20		38.4			
		#40		46.9			
		#60		56.4			
		#100		68.5			
		#200		79.4			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING EP-2 SAMPLE 058 DEPTH 5-55

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

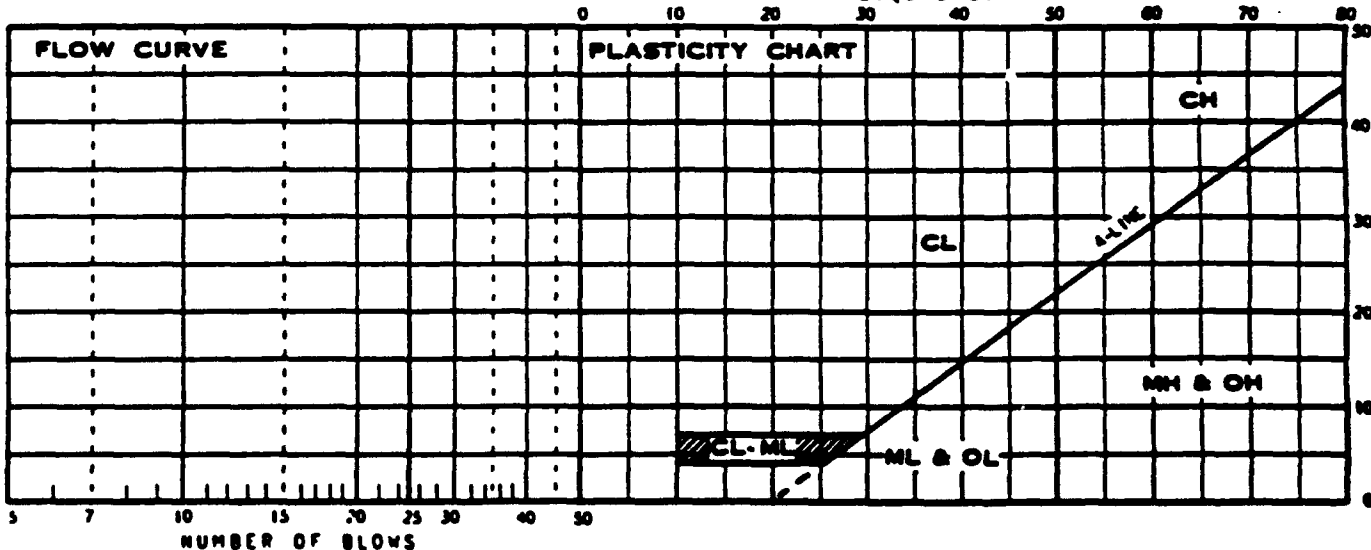
PLASTIC LIMIT BY LAF. 9.8922

DETERMINATION	1	2	3	4	5	6
DISH	AL 123	AL 127				
WT OF DISH + WET SOIL	18.78	20.59				
WT OF DISH + DRY SOIL	16.65	19.24				
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT	13.97	13.95	V=14			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL 96	AL 100	A-4			
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

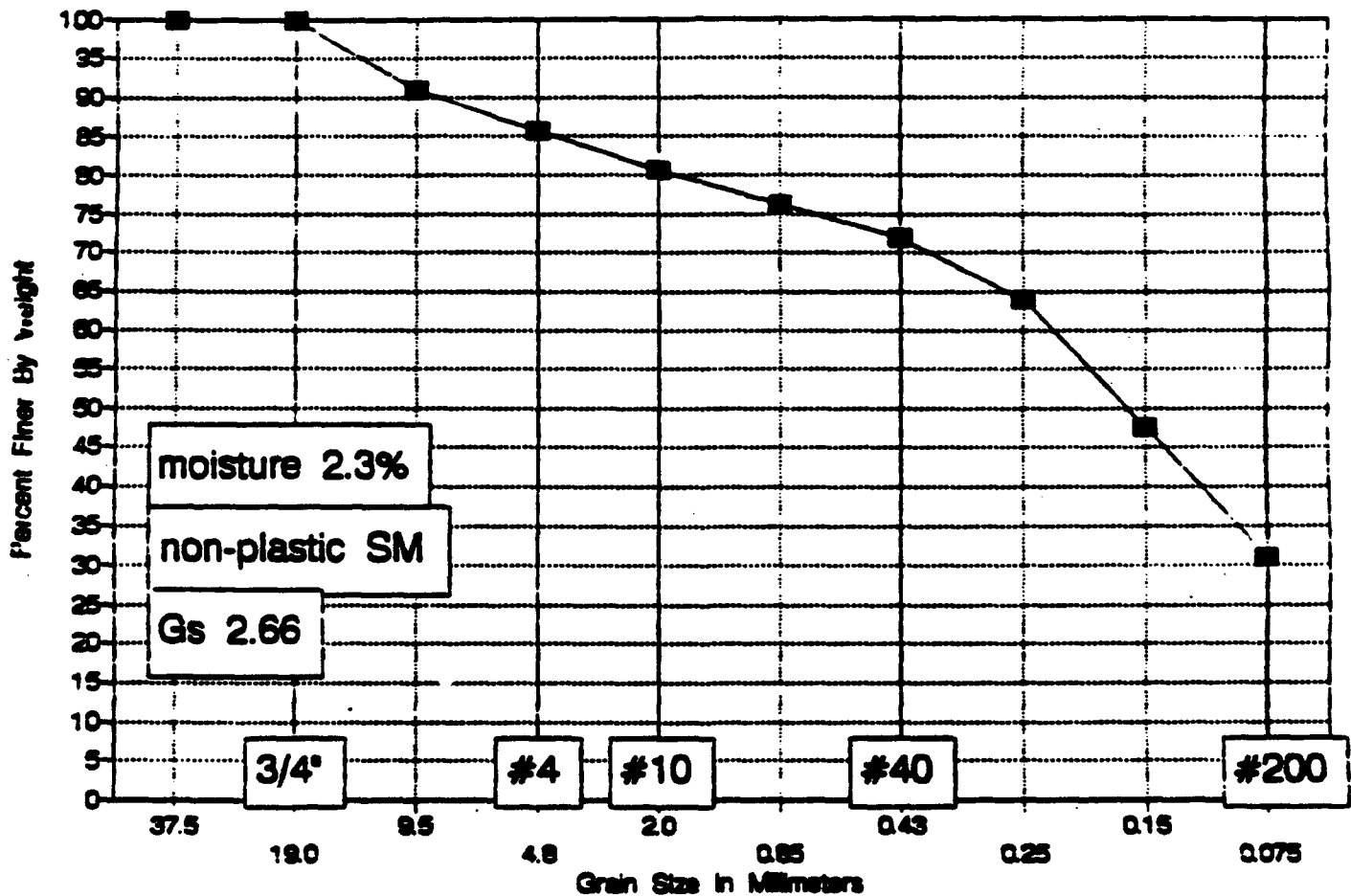


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
			14		NP

# GRADATION CURVE

Site EP-01-059, Sample at 0 to 1 feet





James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-059

Depth 0-1 feet

Moisture Content = 2.3

Wt soil and dish	306.2
Dry soil & dish	301.7
Dish	109.8

#### SIEVE ANALYSIS

Dry weight of total sample= 191.9

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	17.3	90.98%	91.0	9.5
# 4	27.3	85.77%	85.8	4.8
# 10	36.9	80.77%	80.8	2.0
# 20	45.6	76.24%	76.2	0.85
# 40	54	71.86%	71.9	0.43
# 60	69.1	63.99%	64.0	0.25
# 100	100.5	47.63%	47.6	0.15
# 200	132.4	31.01%	31.0	0.075

SA

# MECHANICAL ANALYSIS

DATE 9/10/97 BY LAF  
JOB NUMBER -10081 OWNER/CLIENT Jm Montzomery  
LOCATION \_\_\_\_\_  
BORING EP-01 SAMPLE 059 DEPTH 0-1'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>208</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>306.2</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>301.7</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>109.8</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>2.3</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		17.3		
		#4		87.3		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		36.9			
		#20		45.6			
		#40		54.0			
		#60		69.1			
		#100		100.5			
		#200		132.4			
		PAN					
		TOTAL					

\* NAIL + ALLE: WEIGHT IN SAMPLE

# ATZBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. - 6081  
CLIENT/OWNER JM Martzomery  
LOCATION \_\_\_\_\_  
BORING EP-Q SAMPLE 039 DEPTH 0-1'

## FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

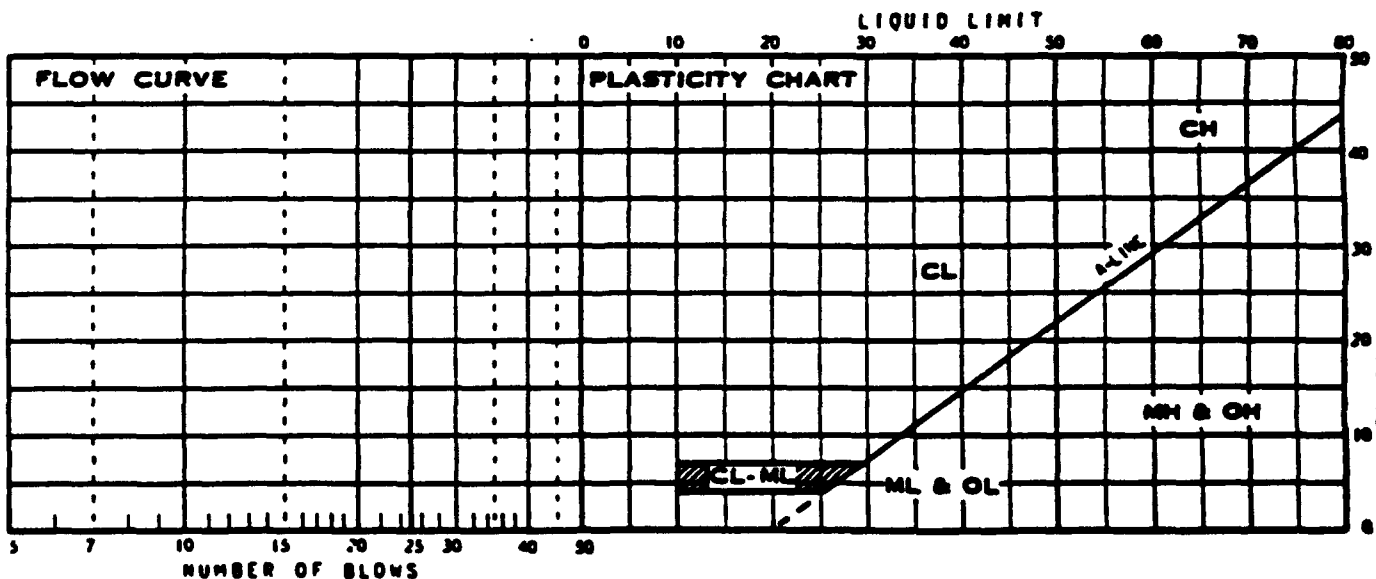
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

## PLASTIC LIMIT BY LF. 9/14/92

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL129</u>	<u>AL5</u>	<u>could not thread</u>			
WT OF DISH + WET SOIL			<u>- ORGANIC</u>			
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT						

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL114</u>	<u>AL98</u>	<u>AL11</u>	<u>could not get</u>		
NUMBER OF BLOWS				<u>adequate</u>		
WT OF DISH + WET SOIL				<u>low count</u>		
WT OF DISH + DRY SOIL				<u>(25)</u>		
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						

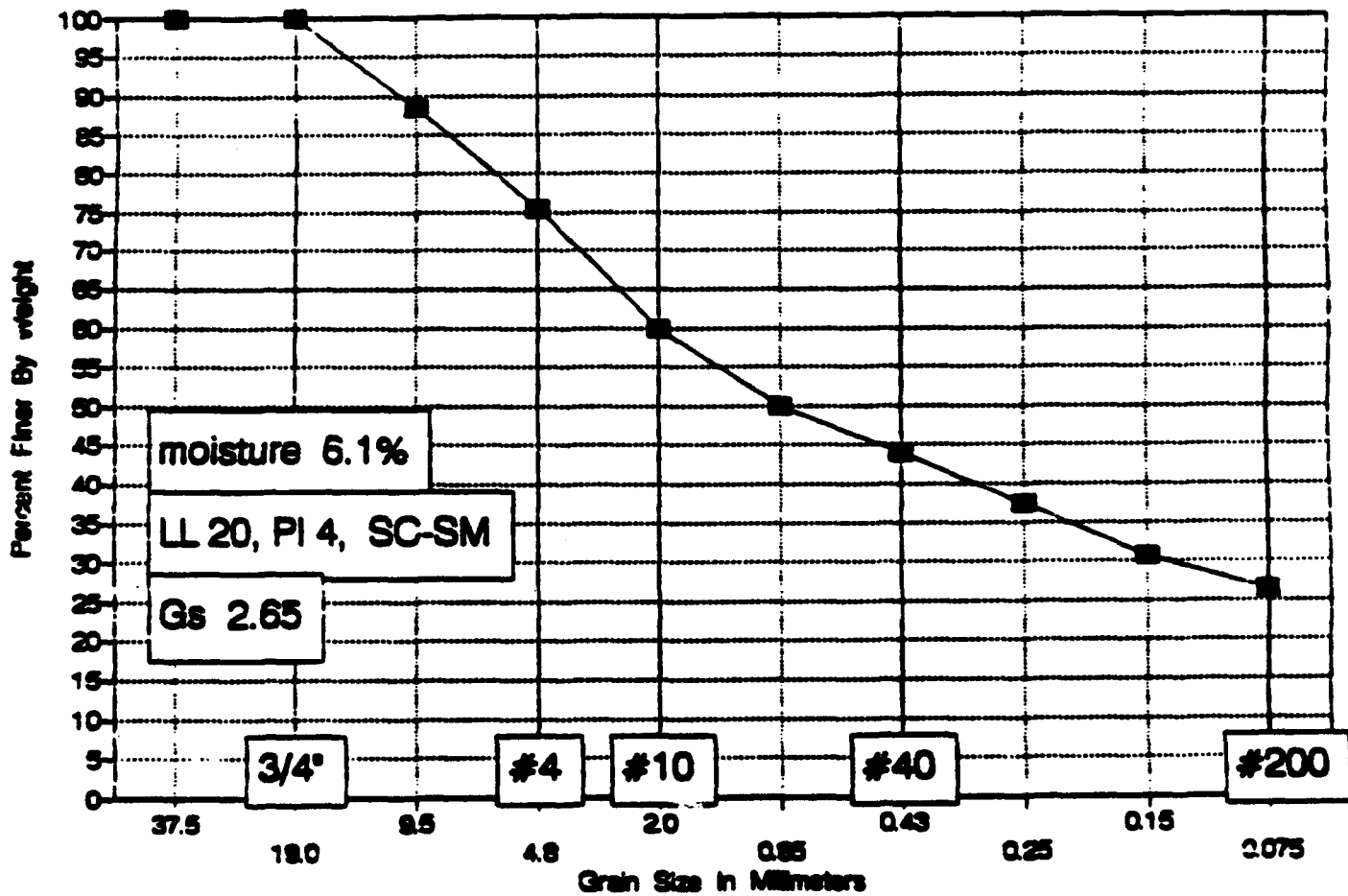


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site EP-01-061, Sample at 4.5 to 5 feet



James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-061

Depth 4.5-5 feet

Moisture Content = 6.1

Wt soil and dish	282
Dry soil & dish	271.9
Dish	106.2

### SIEVE ANALYSIS

Dry weight of total sample= 165.7

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	19.1	88.47%	88.5	9.5
# 4	40.6	75.50%	75.5	4.8
# 10	66.3	59.99%	60.0	2.0
# 20	83.1	49.85%	49.8	0.85
# 40	92.9	43.93%	43.9	0.43
# 60	103.7	37.42%	37.4	0.25
# 100	114.8	30.72%	30.7	0.15
# 200	122.1	26.31%	26.3	0.075

# MECHANICAL ANALYSIS

DATE 9/8/92 BY LCF  
 JOB NUMBER -10081 OWNER/CLIENT JRM Montgomery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 061 DEPTH 4.5-5'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>82</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>282.0</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>271.9</u>
WT. OF WET SOIL		WT. OF MOISTURE	<u>10.2</u>
FIELD DENSITY		WT. OF DISH	<u>106.2</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>6.1</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		19.1		
		#4		40.6		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		46.3			
		#20		83.1			
		#40		92.9			
		#60		103.7			
		#100		114.8			
		#200		122.1			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO. -10051

CLIENT/OWNER Jm Montzom?

LOCATION

BORING EP-01 SAMPLE 061 DEPTH 4.5-5

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

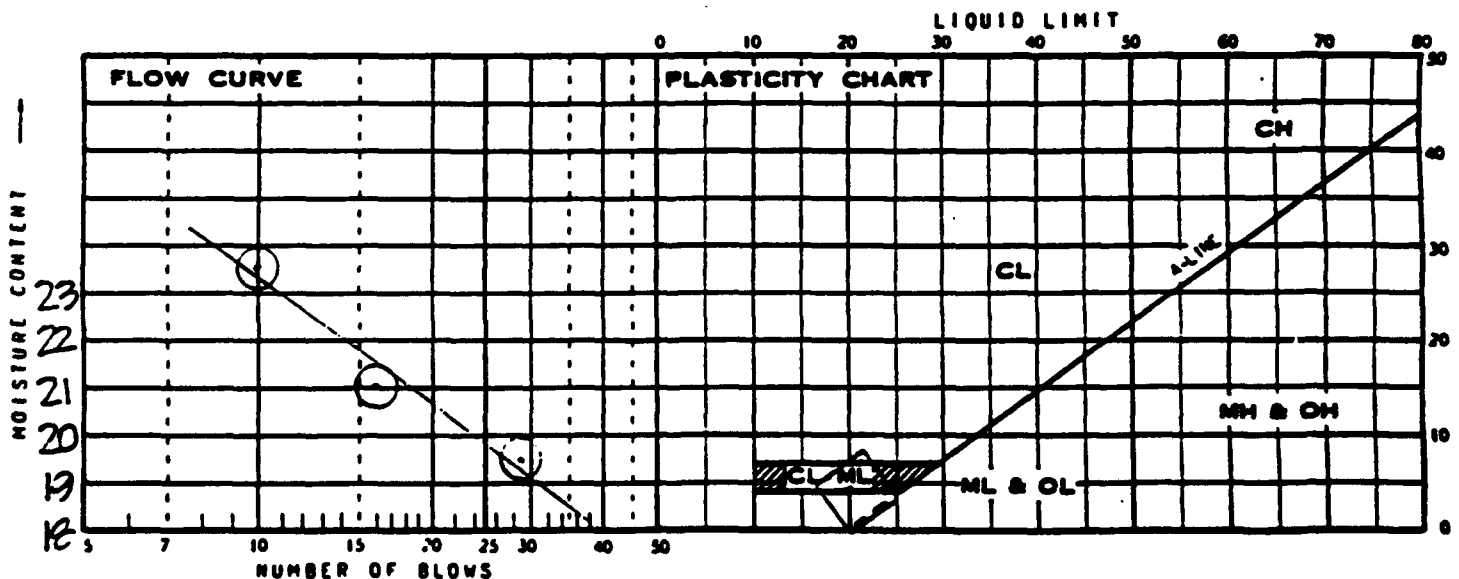
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LA.F. 91092

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL92</u>	<u>AL98</u>				
WT OF DISH + WET SOIL	<u>16.46</u>	<u>21.20</u>				
WT OF DISH + DRY SOIL	<u>14.43</u>	<u>18.47</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT	<u>15.58</u>	<u>15.99</u>	<u>X=16</u>			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL92</u>	<u>AL104</u>	<u>AL100</u>			
NUMBER OF BLOWS	<u>29</u>	<u>16</u>	<u>10</u>			
WT OF DISH + WET SOIL	<u>13.09</u>	<u>14.07</u>	<u>13.63</u>			
WT OF DISH + DRY SOIL	<u>11.18</u>	<u>11.87</u>	<u>11.29</u>			
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT	<u>19.53</u>	<u>21.01</u>	<u>23.66</u>			

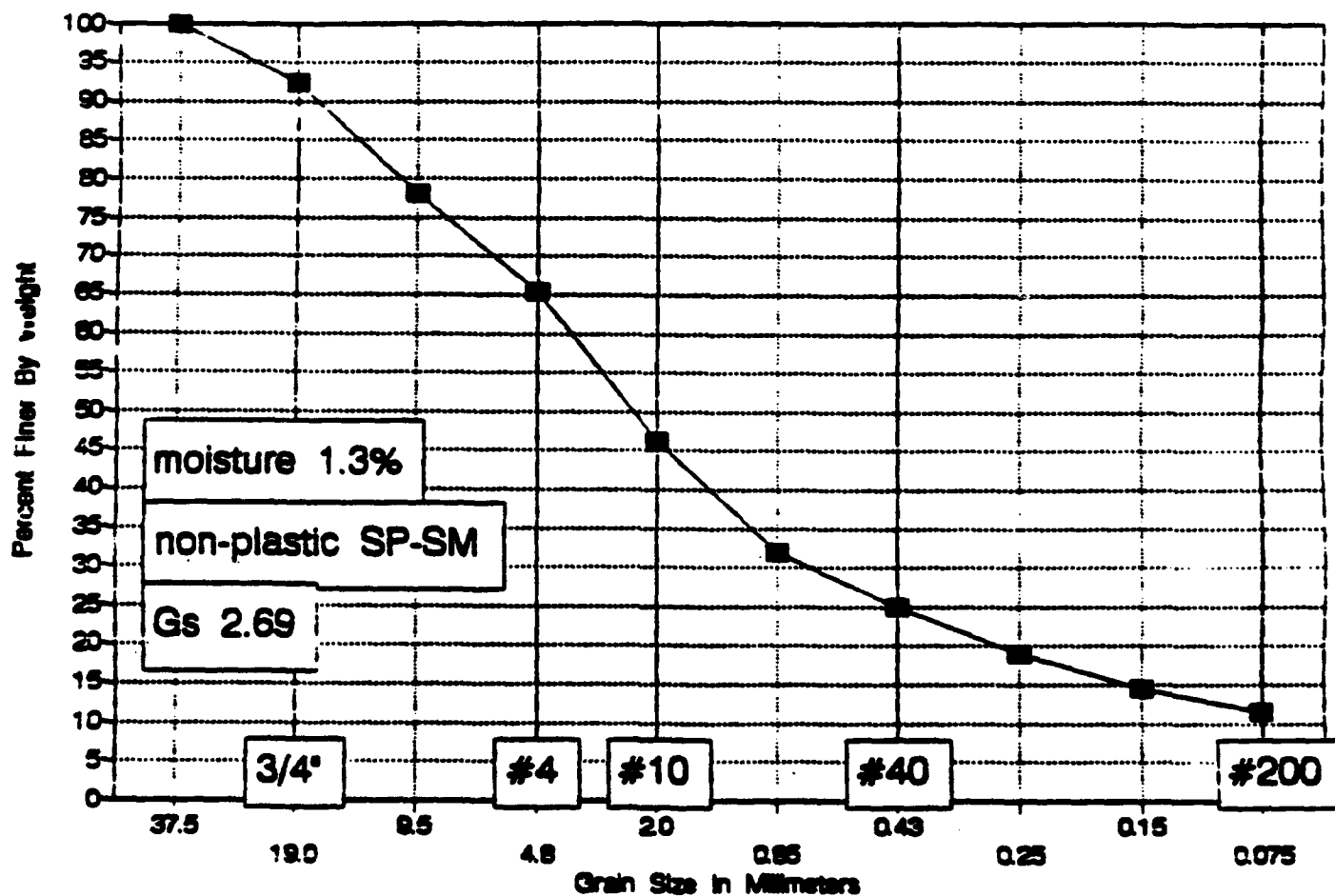


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		<u>20</u>	<u>16</u>	<u>4</u>	<u>CL-ML</u>

# GRADATION CURVE

Site EP-01-063, Sample at 1 to 2 feet





James M. Montgomery  
P.O. 2942-0130

Site ID	EP-01-063	Wt soil and dish	307.7
		Dry soil & dish	305.2
Depth	1-2 feet	Dish	109.2
Moisture Content =	1.3		

#### SIEVE ANALYSIS

Dry weight of total sample= 196

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	14.9	92.40%	92.4	19.0
3/8 inch	42.8	78.16%	78.2	9.5
# 4	67.8	65.41%	65.4	4.8
# 10	105.4	46.22%	46.2	2.0
# 20	133.3	31.99%	32.0	0.85
# 40	147.3	24.85%	24.8	0.43
# 60	158.9	18.93%	18.9	0.25
# 100	167.5	14.54%	14.5	0.15
# 200	173.5	11.48%	11.5	0.075

# MECHANICAL ANALYSIS

GA

DATE 9/3/92

BY LIF

JOB NUMBER -6081

OWNER/CLIENT Jim Montgomery

LOCATION \_\_\_\_\_

BORING EP-01

SAMPLE 063

DEPTH 1-2'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>203</u>
WT. OF RINGS & WET SOIL	<u>/</u>	WT. OF DISH & WET SOIL	<u>307.7</u>
WT. OF RINGS	<u>/</u>	WT. OF DISH & DRY SOIL	<u>305.2</u>
WT. OF WET SOIL	<u>/</u>	WT. OF MOISTURE	<u>109.2</u>
FIELD DENSITY	<u>/</u>	WT. OF DISH	<u>109.2</u>
DRY DENSITY	<u>/</u>	WT. OF DRY SOIL	<u>1.3</u>
		FIELD MOISTURE CONTENT	<u>1.3</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		14.9		
		3/8"		42.8		
		#4		67.8		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		105.4			
		#20		133.3			
		#40		147.3			
		#60		158.9			
		#100		167.5			
		#200		173.5			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. 1051  
CLIENT/OWNER MTA  
LOCATION 170-0005  
BORING 17-0 SAMPLE 2 DEPTH 1-0

## FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

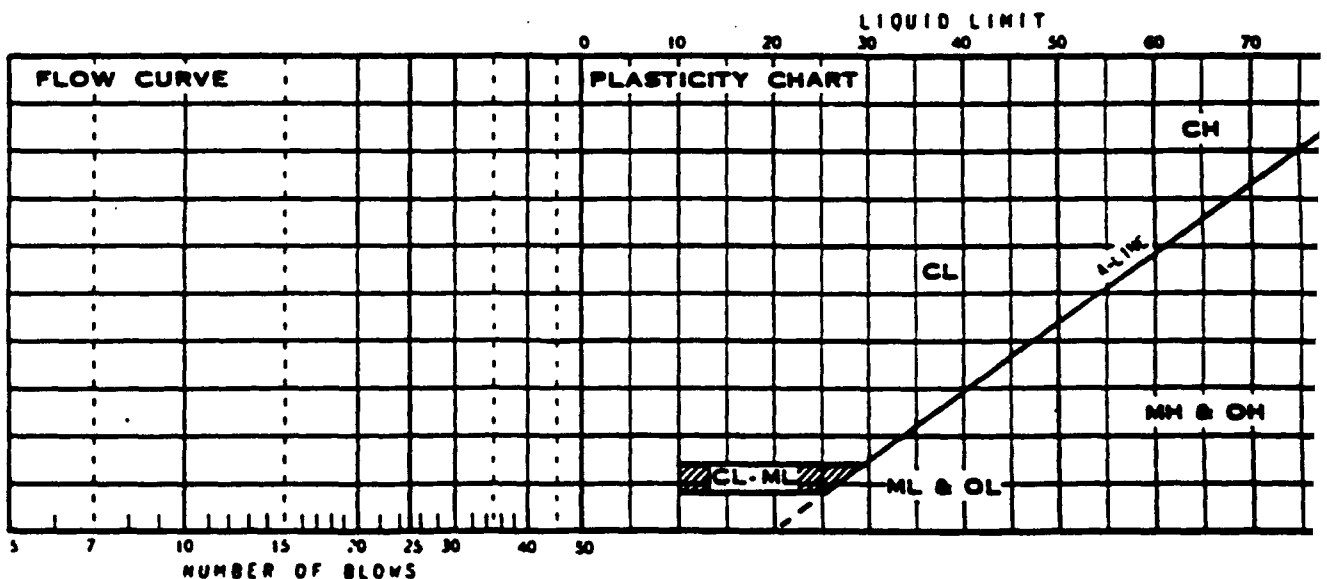
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

## PLASTIC LIMIT BY LAF. 9.992

DETERMINATION	1	2	3	4	5	6
DISH	<u>13</u>	<u>20</u>	<u>could not thread (sandy)</u>			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH						
WT OF DRY SOIL						
MOISTURE CONTENT						

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 109</u>	<u>183</u>	<u>9A</u>	<u>could not get adequate blow count (25)</u>		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH						
WT OF DRY SOIL						
MOISTURE CONTENT						

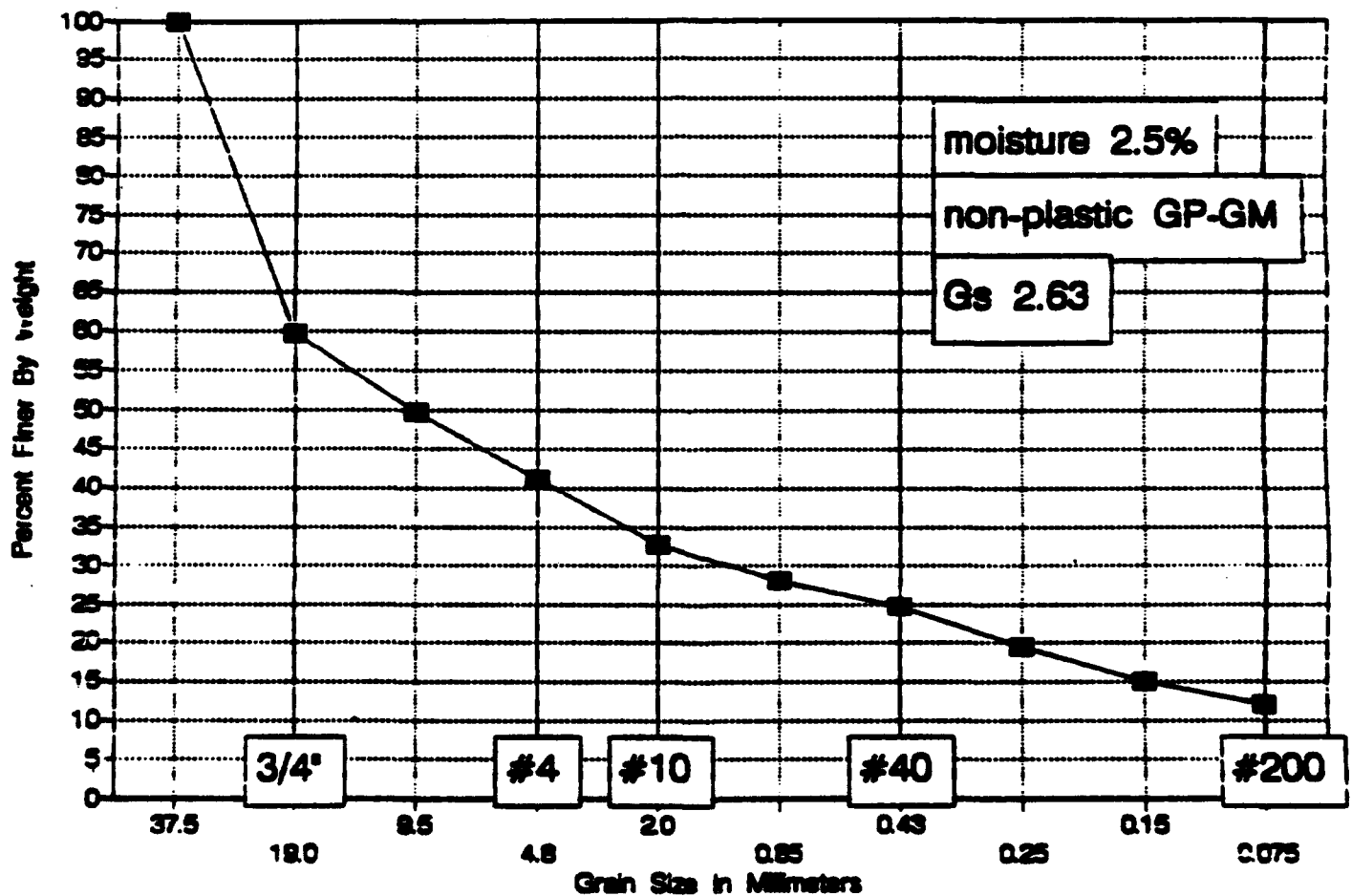


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site EP-01-064, Sample at 0.5 to 1 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	EP-01-064	Wt soil and dish	418.1
		Dry soil & dish	410.7
Depth	0.5-1 feet	Dish	112.9
Moisture Content	= 2.5		

#### SIEVE ANALYSIS

Dry weight of total sample= 297.8

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	120.5	59.54%	59.5	19.0
3/8 inch	149.5	49.80%	49.8	9.5
# 4	175.4	41.10%	41.1	4.8
# 10	200.2	32.77%	32.8	2.0
# 20	214.1	28.11%	28.1	0.85
# 40	224.1	24.75%	24.7	0.43
# 60	239.6	19.54%	19.5	0.25
# 100	253.1	15.01%	15.0	0.15
# 200	262.1	11.99%	12.0	0.075

# MECHANICAL ANALYSIS

DATE 9/3/92

BY LAF

JOB NUMBER -6001

OWNER/CLIENT Jm montgomery

LOCATION \_\_\_\_\_

BORING EP-01

SAMPLE 064

DEPTH 0.5 - 1'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>301</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>410.1</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>410.7</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>112.9</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>2.5</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		<u>120.5</u>		
		3/8"		<u>149.5</u>		
		#4		<u>175.4</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>200.2</u>			
		#20		<u>214.1</u>			
		#40		<u>224.1</u>			
		#60		<u>239.6</u>			
		#100		<u>253.1</u>			
		#200		<u>262.1</u>			
		PAN					
		TOTAL					

# ATTENBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
 LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. - 6031  
 CLIENT/OWNER JM Montgomery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 064 DEPTH 0.5-

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	_____	_____
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

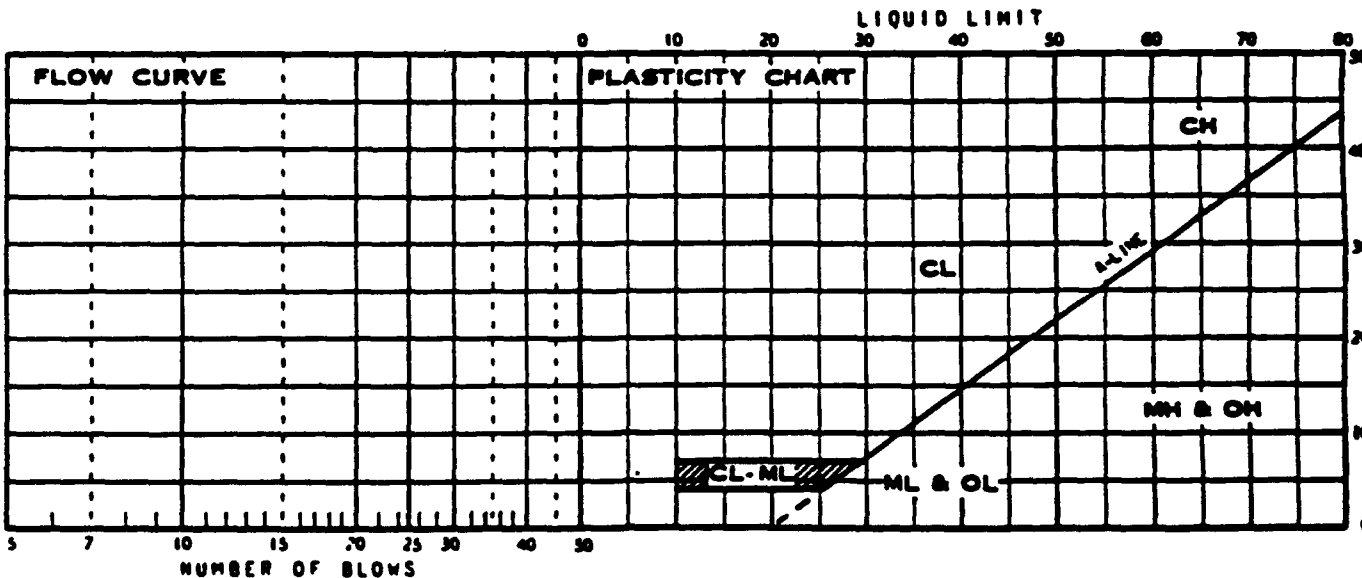
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	_____	_____
WT OF MOISTURE		
WT OF DISH	_____	_____
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE. 9.9.92

DETERMINATION	1	2	3	4	5	6
DISH	<del>AL 07</del>	<del>AL 118</del>	<u>could not thread</u>			
WT OF DISH + WET SOIL	<del>_____</del>	<del>_____</del>	_____	_____	_____	_____
WT OF DISH + DRY SOIL	<del>_____</del>	<del>_____</del>	_____	_____	_____	_____
WT OF MOISTURE	<del>_____</del>	<del>_____</del>	_____	_____	_____	_____
WT OF DISH	<u>1.4</u>	<u>1.4</u>	_____	_____	_____	_____
WT OF DRY SOIL	<del>_____</del>	<del>_____</del>	_____	_____	_____	_____
MOISTURE CONTENT	<del>_____</del>	<del>_____</del>	_____	_____	_____	_____

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<del>AL 109</del>	<del>183</del>	<del>9A</del>	<u>could not get adequate blow count</u>		
NUMBER OF BLOWS	<del>_____</del>	<del>_____</del>	<del>_____</del>	_____	<u>(25)</u>	_____
WT OF DISH + WET SOIL	<del>_____</del>	<del>_____</del>	<del>_____</del>	_____	_____	_____
WT OF DISH + DRY SOIL	<del>_____</del>	<del>_____</del>	<del>_____</del>	_____	_____	_____
WT OF MOISTURE	<del>_____</del>	<del>_____</del>	<del>_____</del>	_____	_____	_____
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>	_____	_____	_____
WT OF DRY SOIL	<del>_____</del>	<del>_____</del>	<del>_____</del>	_____	_____	_____
MOISTURE CONTENT	<del>_____</del>	<del>_____</del>	<del>_____</del>	_____	_____	_____

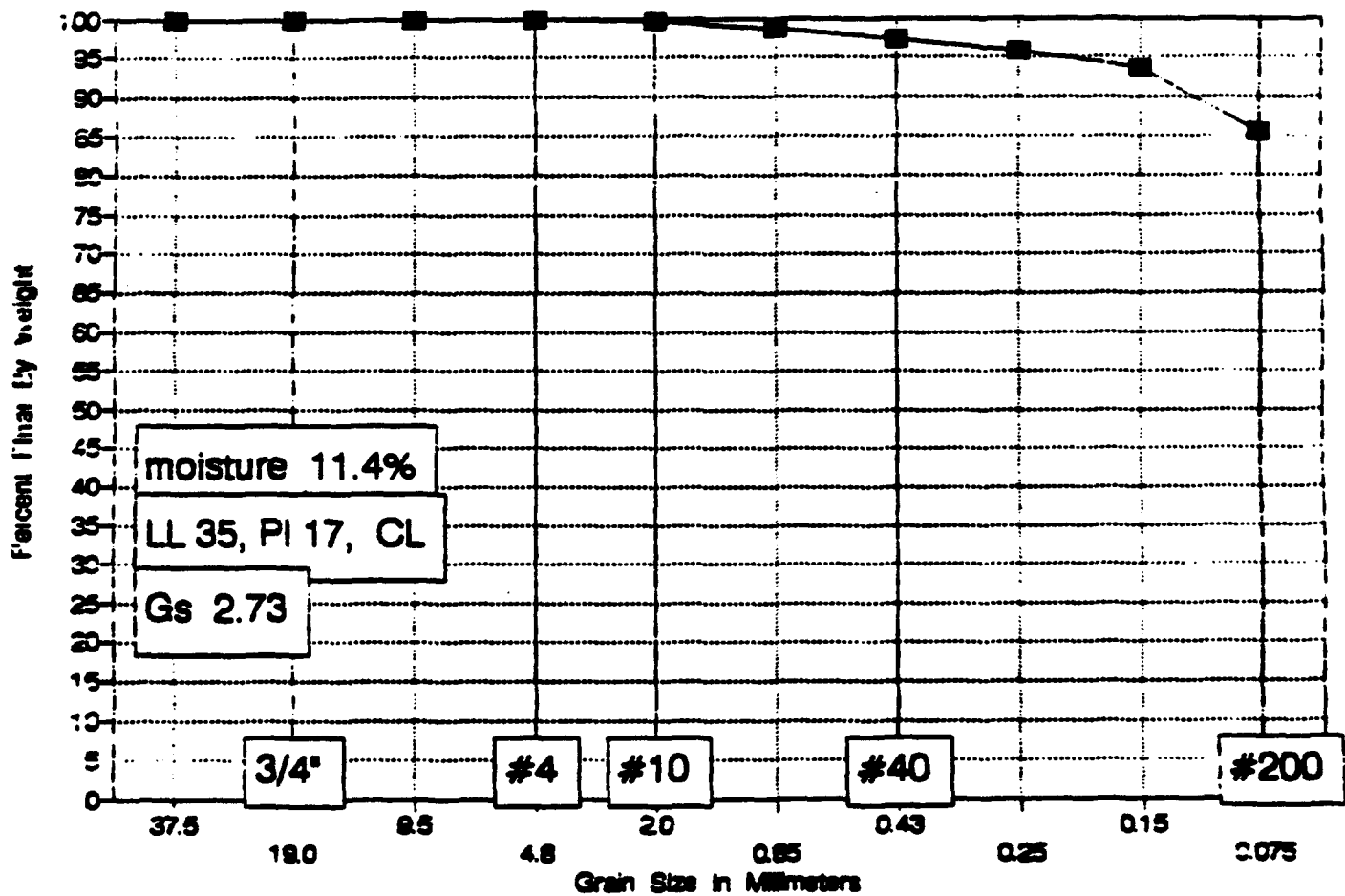


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site EP-01-065, Sample at 4.5 to 5 feet





James M. Montgomery  
P.O. 2942-0130

Site ID	EP-01-065	Wt soil and dish	223.9
		Dry soil & dish	211.5
Depth	4.5-5 feet	Dish	102.5
Moisture Content =	11.4		

#### SIEVE ANALYSIS

Dry weight of total sample= 109

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.35	99.68%	99.7	2.0
# 20	1.62	98.51%	98.5	0.85
# 40	2.93	97.31%	97.3	0.43
# 60	4.48	95.89%	95.9	0.25
# 100	7.05	93.53%	93.5	0.15
# 200	15.83	85.48%	85.5	0.075

# MECHANICAL ANALYSIS

DATE 2/4/92 BY LM  
 JOB NUMBER -6081 OWNER/CLIENT Jim Mattson Inc.  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 065 DEPTH 45-5'

NUMBER OF RINGS	<u>1</u>	DISH	<u>80</u>
WT. OF RINGS & WET SOIL	<u>223.9</u>	WT. OF DISH & WET SOIL	<u>223.9</u>
WT. OF RINGS	<u>211.5</u>	WT. OF DISH & DRY SOIL	<u>211.5</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>102.5</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>11.4</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		<u>0</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCU- MUL WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>0.35</u>			
		#20		<u>1.62</u>			
		#40		<u>2.93</u>			
		#60		<u>4.48</u>			
		#100		<u>7.05</u>			
		#200		<u>15.83</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING EP-01 SAMPLE 065 DEPTH 4.5-5

## FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

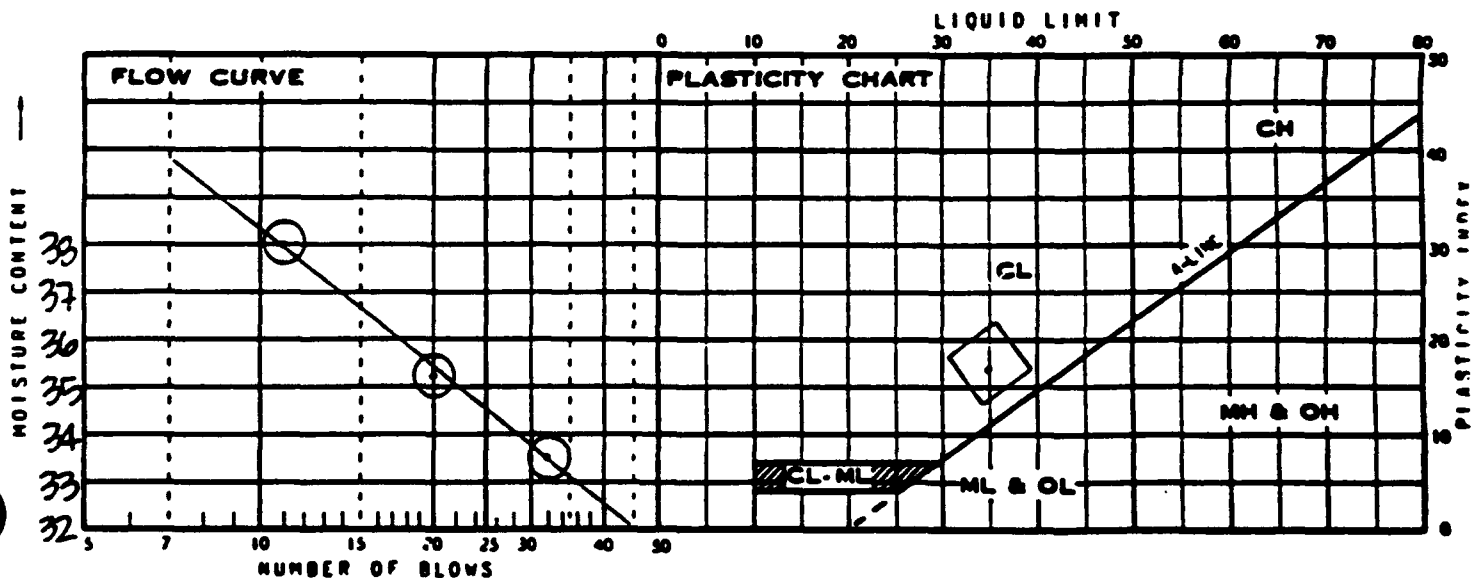
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

## PLASTIC LIMIT BY L&E 9.9.92

DETERMINATION	1	2	3	4	5	6
DISH	A-7	AL104				
WT OF DISH + WET SOIL	13.33	14.63				
WT OF DISH + DRY SOIL	15.77	12.62				
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT	17.81	17.91	X=18			

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL130	AL98	AL106			
NUMBER OF BLOWS	32	20	11			
WT OF DISH + WET SOIL	11.89	15.32	13.02			
WT OF DISH + DRY SOIL	9.26	11.70	9.82			
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT	33.46	35.15	38.00			

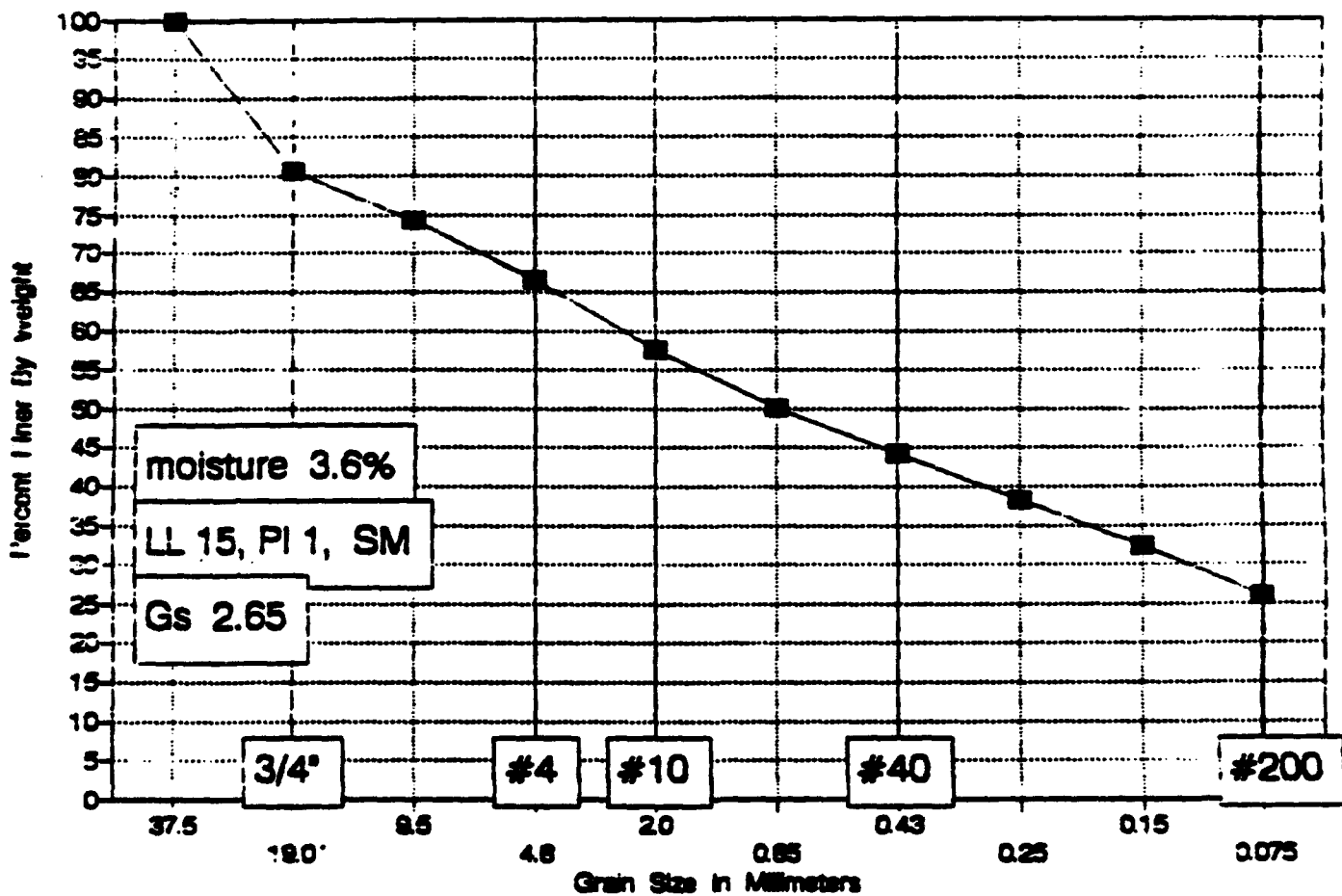


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		35	18	17	IL

# GRADATION CURVE

Site EP-01-066, Sample at 5 to 5.5 feet



James M. Montgomery  
F.O. 2942-0130

Site ID	EP-01-066	Wt soil and dish	240.1
		Dry soil & dish	235.3
Depth	5-5.5 feet	Dish	102.9
Moisture Content =	3.6		

#### SIEVE ANALYSIS

Dry weight of total sample= 132.4

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	25.6	80.66%	80.7	19.0
3/8 inch	34	74.32%	74.3	9.5
# 4	44.4	66.47%	66.5	4.8
# 10	56.2	57.55%	57.6	2.0
# 20	66	50.15%	50.2	0.85
# 40	73.8	44.26%	44.3	0.43
# 60	81.7	38.29%	38.3	0.25
# 100	89.5	32.40%	32.4	0.15
# 200	98	25.98%	26.0	0.075

5A

# MECHANICAL ANALYSIS

DATE 3/14/92

BY LIF

JOB NUMBER -6021

OWNER/CLIENT Jm Montgomery

LOCATION \_\_\_\_\_

BORING EP-01

SAMPLE 066

DEPTH 5-5.5'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>50</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>240.1</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>235.3</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>1029</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>3.6</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		0		
		3/4"		25.6		
		3/8"		34.0		
		#4		44.4		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		56.2			
		#20		66.0			
		#40		73.8			
		#60		81.7			
		#100		89.5			
		#200		98.0			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING EP-01 SAMPLE 066 DEPTH 5.55

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

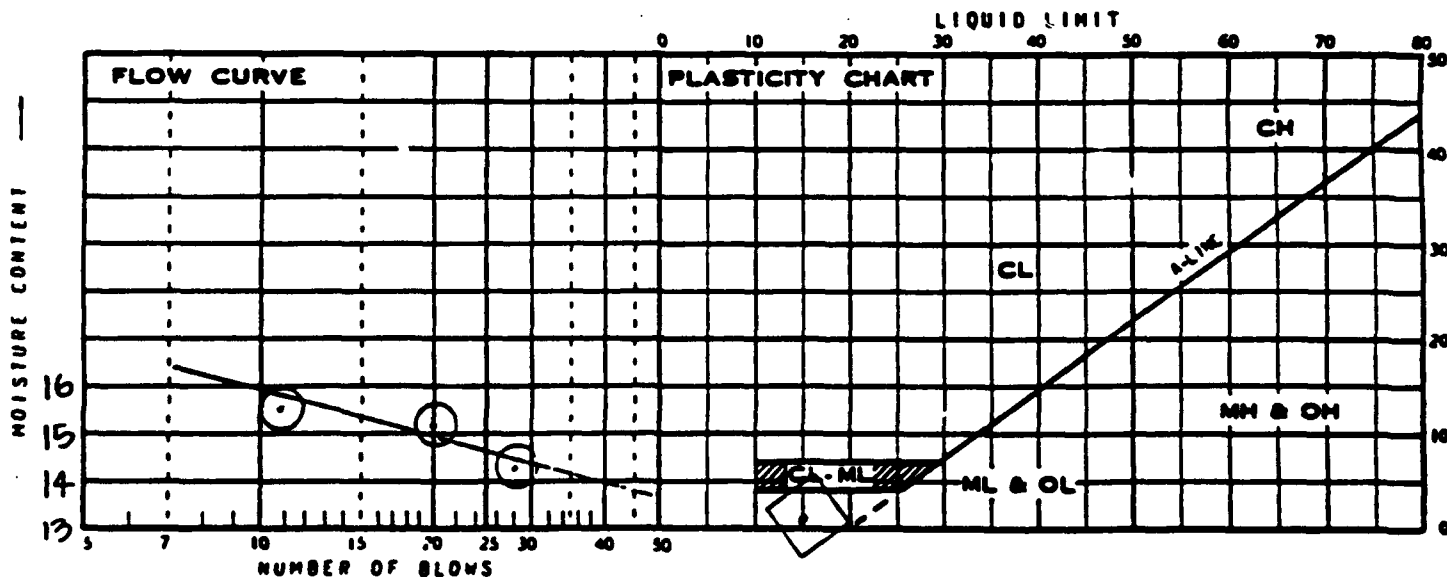
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LA F. 9.16.92

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL106</u>	<u>AL131</u>				
WT OF DISH + WET SOIL	<u>15.32</u>	<u>17.56</u>				
WT OF DISH + DRY SOIL	<u>13.67</u>	<u>15.61</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT	<u>13.45</u>	<u>13.70</u>	<u><math>\bar{V}=14</math></u>			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL129</u>	<u>AL15</u>	<u>AL102</u>			
NUMBER OF BLOWS	<u>28</u>	<u>20</u>	<u>11</u>			
WT OF DISH + WET SOIL	<u>10.58</u>	<u>9.13</u>	<u>8.16</u>			
WT OF DISH + DRY SOIL	<u>9.43</u>	<u>8.11</u>	<u>7.25</u>			
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT	<u>14.32</u>	<u>15.20</u>	<u>15.56</u>			

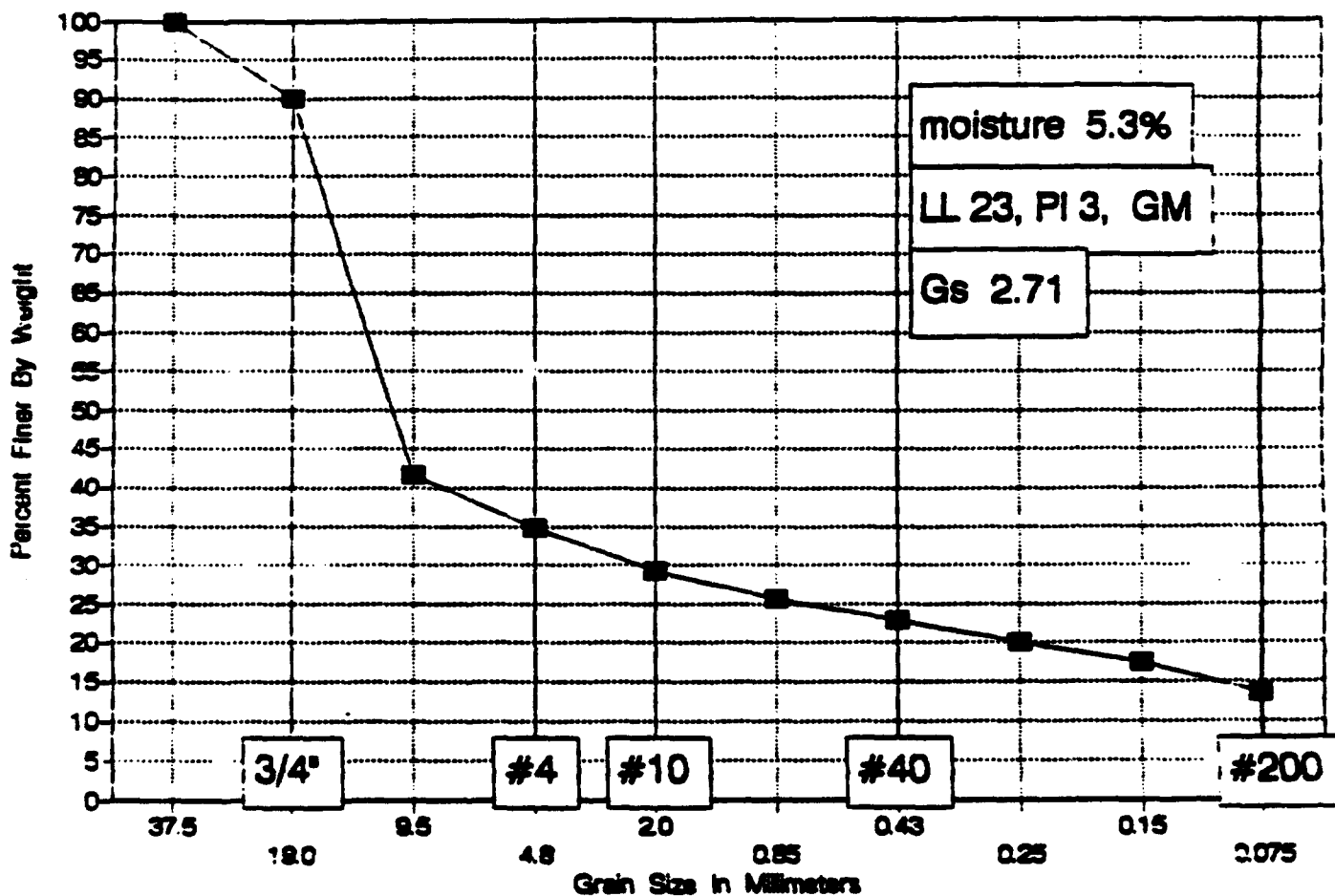


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		<u>15</u>	<u>14</u>		<u>ML</u>

# GRADATION CURVE

Site EP-01-074, Sample at 9.5 to 10 feet





James M. Montgomery  
P.O. 2942-0130

Site ID	EP-01-074	Wt soil and dish	266.9
		Dry soil & dish	258.9
Depth	9.5-10 feet	Dish	107.5
Moisture Content =	5.3		

#### SIEVE ANALYSIS

Dry weight of total sample= 151.4

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	15.2	89.96%	90.0	19.0
3/8 inch	88.2	41.74%	41.7	9.5
# 4	98.6	34.87%	34.9	4.8
# 10	107.1	29.26%	29.3	2.0
# 20	112.5	25.69%	25.7	0.85
# 40	116.7	22.92%	22.9	0.43
# 60	121	20.08%	20.1	0.25
# 100	125	17.44%	17.4	0.15
# 200	131	13.47%	13.5	0.075

SA

# MECHANICAL ANALYSIS

DATE 2/8/92 BY LCF  
 JOB NUMBER -6061 OWNER/CLIENT Jrn montzomery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 074 DEPTH 9.5-10'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>306</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>266.9</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>258.9</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>107.5</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>5.3</u>

WASH SEIVE \_\_\_\_\_ DRY SEIVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		<u>15.2</u>		
		3/8"		<u>88.2</u>		
		#4		<u>98.6</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>107.1</u>			
		#20		<u>112.5</u>			
		#40		<u>116.7</u>			
		#60		<u>121.0</u>			
		#100		<u>125.0</u>			
		#200		<u>131.0</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. 6081  
CLIENT/OWNER JM Montzomer  
LOCATION \_\_\_\_\_  
BORING EP-01 SAMPLE 074 DEPTH 9.5

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

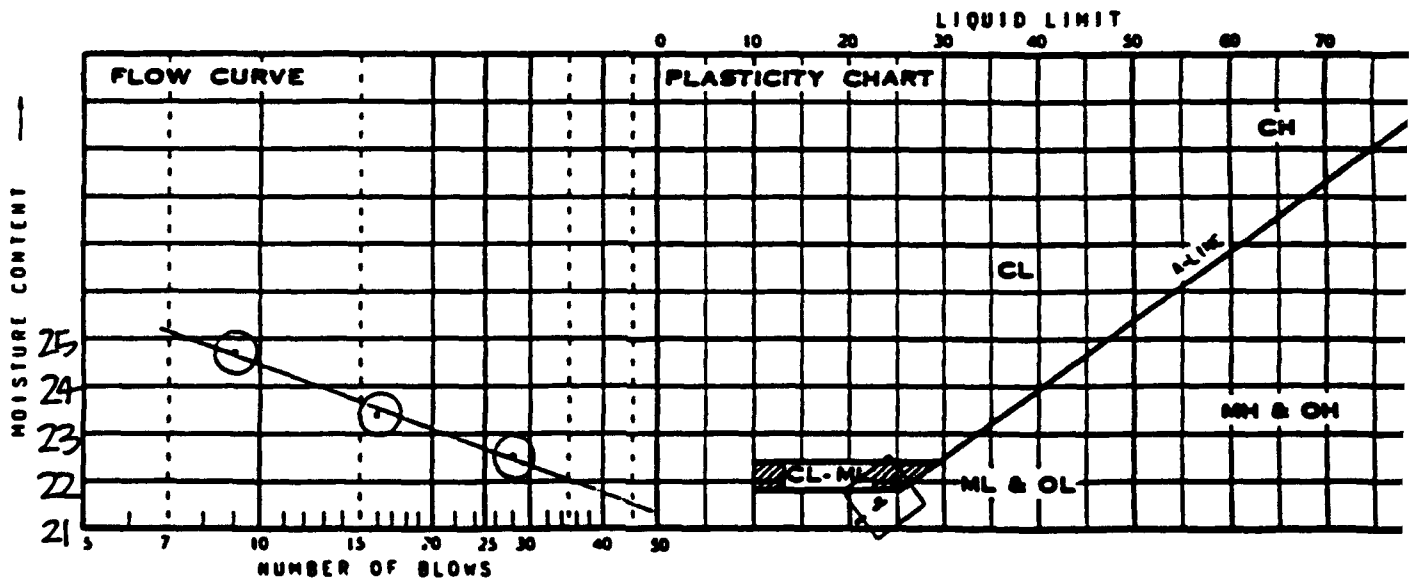
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY CAF 9/19/92

DETERMINATION	1	2	3	4	5	6
DISH	<u>103</u>	<u>AL133</u>				
WT OF DISH + WET SOIL	<u>9.61</u>	<u>10.63</u>				
WT OF DISH + DRY SOIL	<u>8.27</u>	<u>9.09</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT	<u>19.51</u>	<u>20.03</u>	<u>X=20</u>			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 77</u>	<u>AL 122</u>	<u>651</u>			
NUMBER OF BLOWS	<u>28</u>	<u>16</u>	<u>9</u>			
WT OF DISH + WET SOIL	<u>12.33</u>	<u>12.11</u>	<u>11.51</u>			
WT OF DISH + DRY SOIL	<u>10.65</u>	<u>10.08</u>	<u>9.50</u>			
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT	<u>22.49</u>	<u>23.39</u>	<u>24.81</u>			

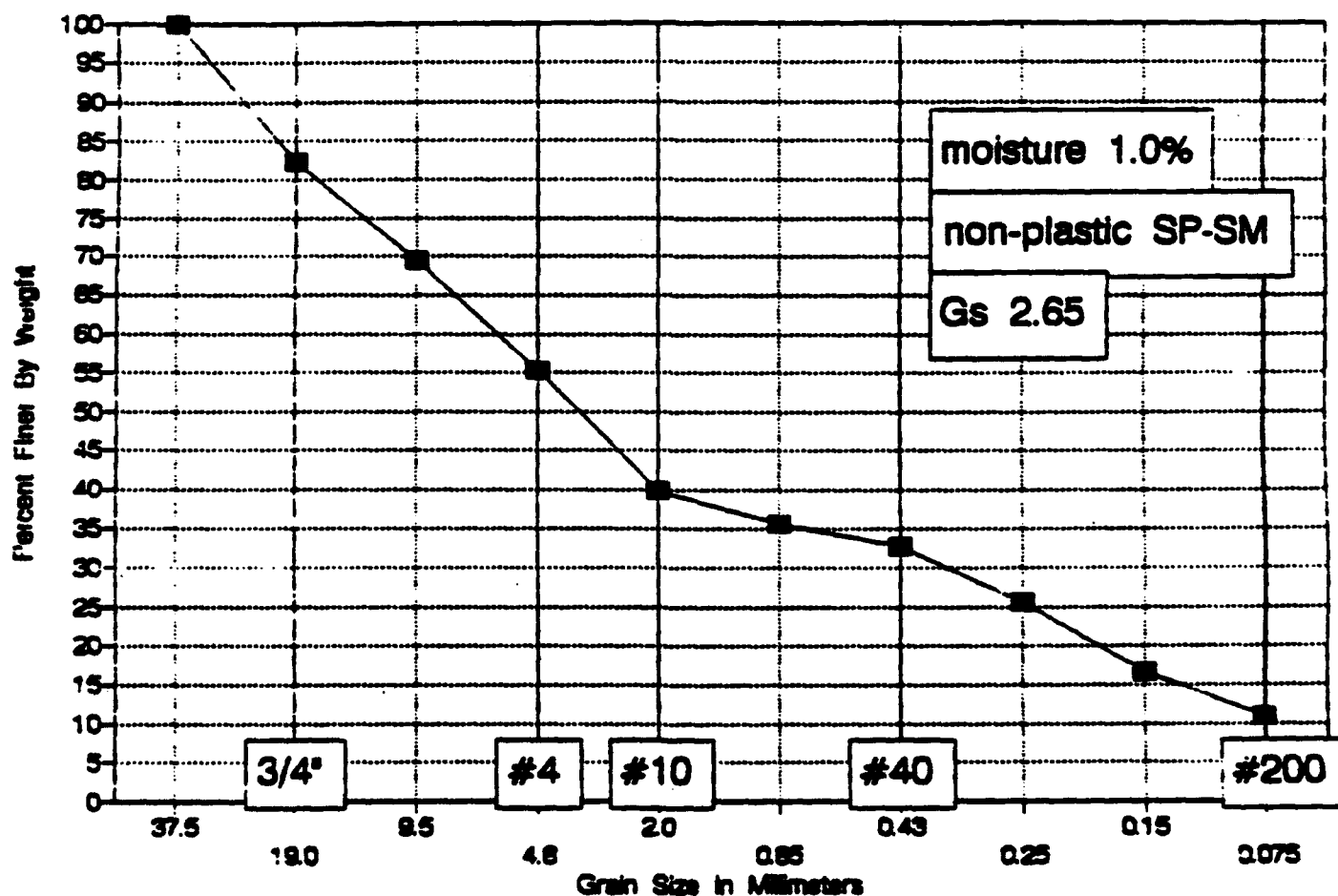


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		<u>23</u>	<u>20</u>	<u>3</u>	<u>ML</u>

**Site EP-01-079, Sample at 0 to 1 feet**

**Site EP-01-079, Sample at 0 to 1 feet**



James M. Montgomery  
P.O. 2942-0130

Site ID	EP-01-079	Wt soil and dish	296.6
Depth	0-1 feet	Dry soil & dish	294.7
		Dish	108.9
Moisture Content =	1.0		

#### SIEVE ANALYSIS

Dry weight of total sample= 185.8

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	32.7	82.40%	82.4	19.0
3/8 inch	56.8	69.43%	69.4	9.5
# 4	82.9	55.38%	55.4	4.8
# 10	111.7	39.88%	39.9	2.0
# 20	119.7	35.58%	35.6	0.85
# 40	125.1	32.67%	32.7	0.43
# 60	138.2	25.62%	25.6	0.25
# 100	154.7	16.74%	16.7	0.15
# 200	165.6	10.87%	10.9	0.075

SA

# MECHANICAL ANALYSIS

DATE 9/10/92 BY LAF  
 JOB NUMBER -6031 OWNER/CLIENT JIN Montgomery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 079 DEPTH 0-1'

NUMBER OF RINGS	<u>bar</u>	DISH	<u>201</u>
WT. OF RINGS & WET SOIL	<u>/</u>	WT. OF DISH & WET SOIL	<u>296.6</u>
WT. OF RINGS	<u>/</u>	WT. OF DISH & DRY SOIL	<u>294.7</u>
WT. OF WET SOIL	<u>/</u>	WT. OF MOISTURE	<u>/</u>
FIELD DENSITY	<u>/</u>	WT. OF DISH	<u>108.9</u>
DRY DENSITY	<u>/</u>	WT. OF DRY SOIL	<u>/</u>
		FIELD MOISTURE CONTENT	<u>1.0</u>

WASH SEIVE \_\_\_\_\_ DRY SEIVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		<u>32.7</u>		
		3/8"		<u>56.8</u>		
		#4		<u>82.9</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>111.7</u>			
		#20		<u>119.7</u>			
		#40		<u>125.1</u>			
		#60		<u>138.2</u>			
		#100		<u>154.7</u>			
		#200		<u>165.6</u>			
		PAN					
		TOTAL					

# ATTIERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. - 6081  
CLIENT/OWNER JM Morrison  
LOCATION \_\_\_\_\_  
BORING EP-01 SAMPLE Q79 DEPTH Q-1

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	_____	_____
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

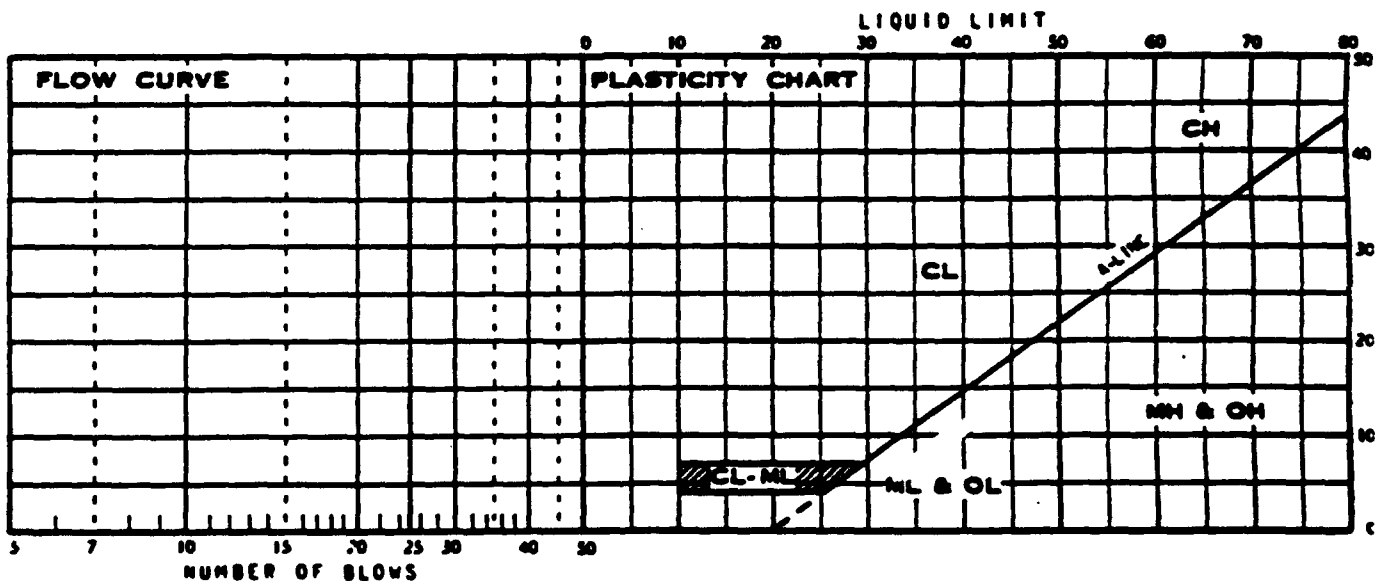
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	_____	_____
WT OF MOISTURE		
WT OF DISH	_____	_____
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9.1492

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL121</u>	<u>AL100</u>				
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	_____	_____	_____	_____	_____	_____
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	_____	_____	_____	_____
WT OF DRY SOIL			_____	_____	_____	_____
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>9A</u>	<u>AL107</u>	<u>AL92</u>			
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	_____	_____	_____	_____	_____	_____
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>	_____	_____	_____
WT OF DRY SOIL				_____	_____	_____
MOISTURE CONTENT						

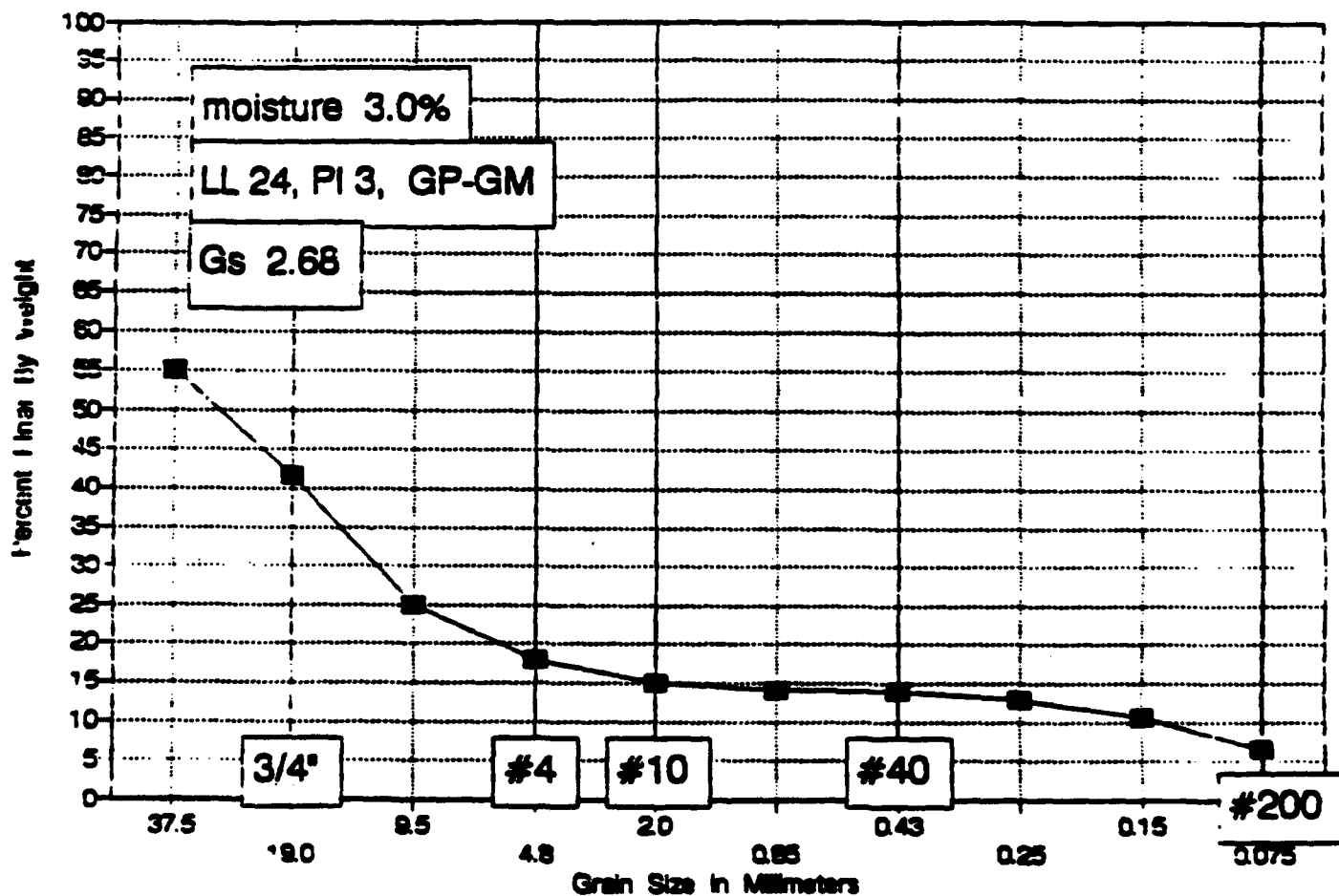


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site EP-01-084, Sample at 4.5 to 5 feet





James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-084  
Depth 4.5-5 feet

Wt soil and dish	339.3
Dry soil & dish	332.5
Dish	107.4

Moisture Content = 3.0

### SIEVE ANALYSIS

Dry weight of total sample= 225.1

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	101.6	54.86%	54.9	37.5
3/4 inch	131.2	41.71%	41.7	19.0
3/8 inch	168.9	24.97%	25.0	9.5
# 4	184.7	17.95%	17.9	4.8
# 10	191.3	15.02%	15.0	2.0
# 20	193.2	14.17%	14.2	0.85
# 40	193.8	13.90%	13.9	0.43
# 60	195.9	12.97%	13.0	0.25
# 100	201.2	10.62%	10.6	0.15
# 200	210.3	6.57%	6.6	0.075

# MECHANICAL ANALYSIS

SA

DATE 9/14/92

BY LAF

JOB NUMBER -6081

OWNER/CLIENT Jm montgomery

LOCATION \_\_\_\_\_

BORING EP-01

SAMPLE 084

DEPTH 4.5-5'

NUMBER OF RINGS	<u>frag</u>	DISH	<u>311</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>329.3</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>332.5</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>107.4</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>3.0</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"		0		
		1-1/2"		10.6		
		3/4"		131.2		
		3/8"		168.9		
		#4		184.7		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		191.3			
		#20		193.2			
		#40		193.8			
		#60		195.9			
		#100		20.2			
		#200		20.3			
		PAN					
		TOTAL					

#1 large gravel

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING EP-01 SAMPLE 034 DEPTH 4.5-5'

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF-9/16/92

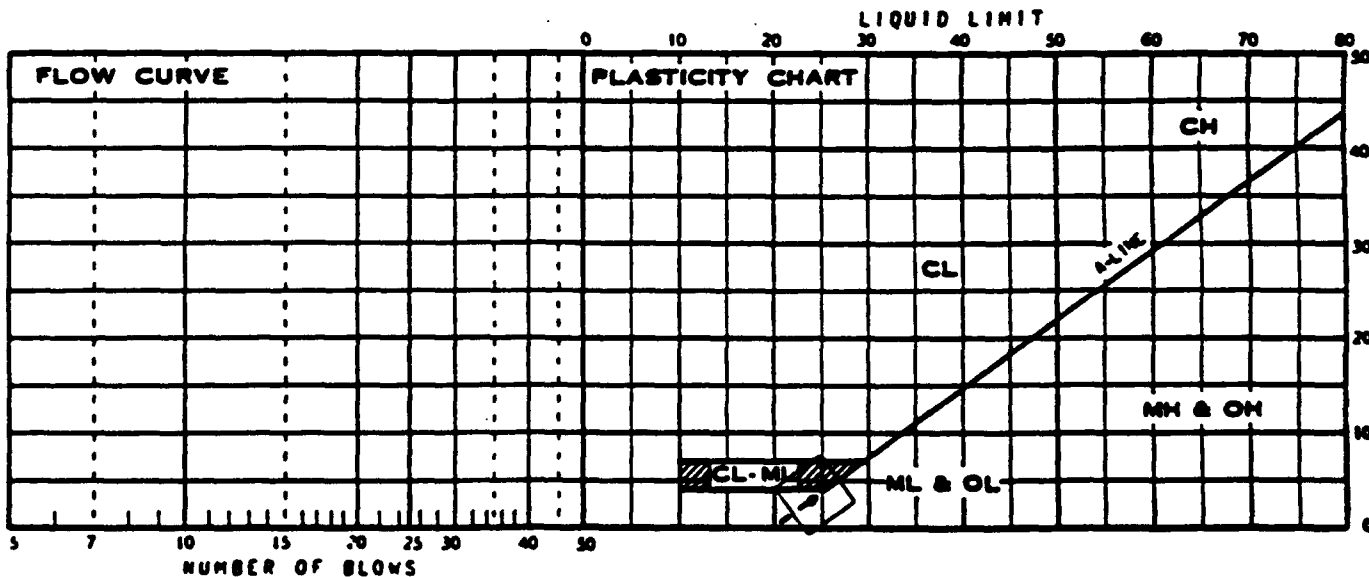
\* Small sample - 0.200" dia

DETERMINATION	1	2	3	4	5	6
DISH	AL 90	AL 93				
WT OF DISH + WET SOIL	8.00	9.35				
WT OF DISH + DRY SOIL	6.03	7.97				
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT	21.55	21.00	$\bar{X} = 21$			

LIQUID LIMIT

K = table factor  $W_N$  = moisture content

DETERMINATION	1	2	3	4	5	6
DISH	A-4	AL 97	AL 119	ONLY enough sample to get 1 pt.		
NUMBER OF BLOWS	29					
WT OF DISH + WET SOIL	9.89					
WT OF DISH + DRY SOIL	8.25					
WT OF MOISTURE				$LL = K(W_N)$ $= (1.018)(23.94)$ $= 24.37$		
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT	23.94					

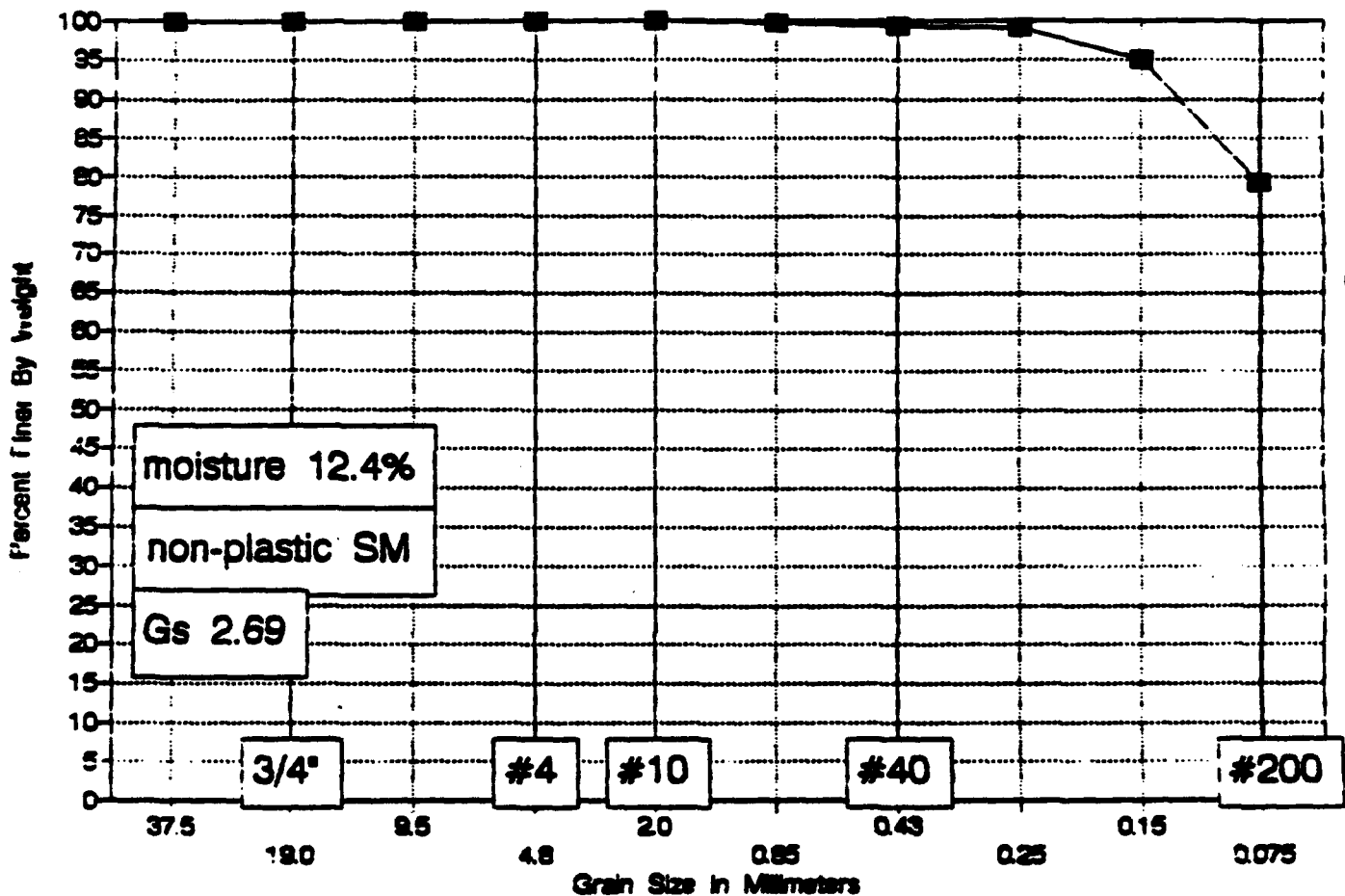


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		24	21	3	ML

# GRADATION CURVE

Site EP-01-090, Sample at 5 to 5.5 feet



James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-090  
Depth 5-5.5 feet

Wt soil and dish 214.6  
Dry soil & dish 203.1  
Dish 110.5

Moisture Content = 12.4

### SIEVE ANALYSIS

Dry weight of total sample= 92.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.1	99.89%	99.9	2.0
# 20	0.2	99.78%	99.8	0.85
# 40	0.6	99.35%	99.4	0.43
# 60	0.9	99.03%	99.0	0.25
# 100	4.6	95.03%	95.0	0.15
# 200	19.1	79.37%	79.4	0.075

# MECHANICAL ANALYSIS

DATE 9/10/92

BY LAF

JOB NUMBER -6031

OWNER/CLIENT JM Mont-Cmsey

LOCATION \_\_\_\_\_

BORING EP-01

SAMPLE 090

DEPTH 5-5.5'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>123</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>214.6</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>203.1</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>110.5</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>12.4</u>

WASH SEIVE \_\_\_\_\_ DRY SEIVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		.1			
		#20		.2			
		#40		.6			
		#60		.9			
		#100		4.6			
		#200		19.1			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_

LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. - (605)

CLIENT/OWNER JRM Montzome

LOCATION \_\_\_\_\_

BORING EP-01 SAMPLE 090 DEPTH 5

FIELD DENSITY BY 1/1/1

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL	_____	_____
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

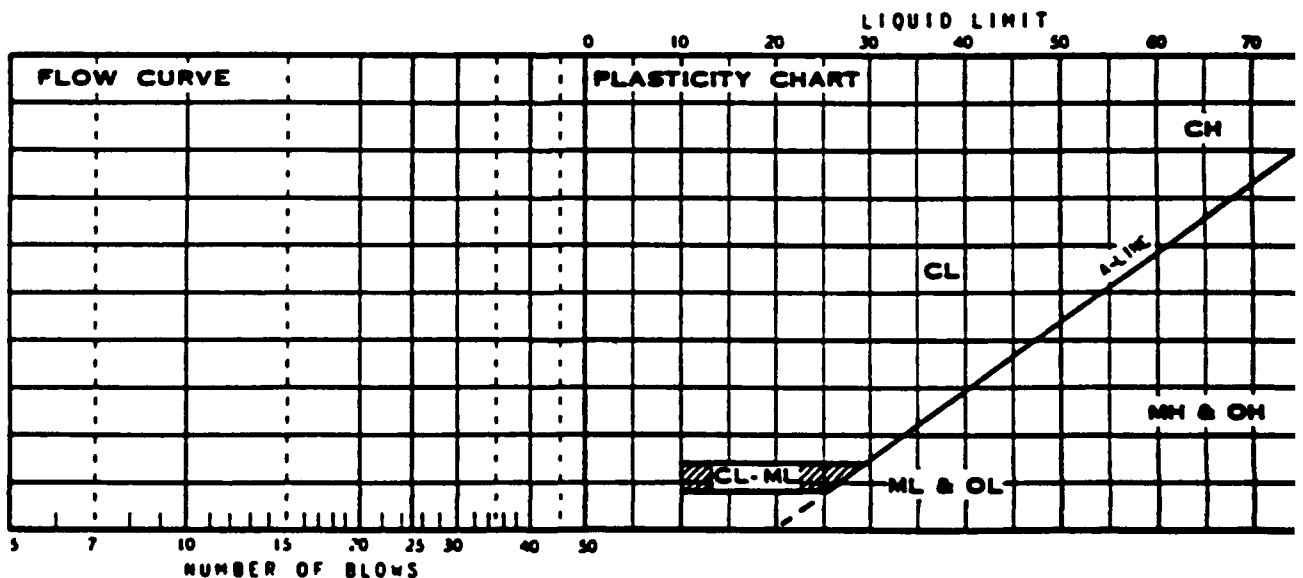
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	_____	_____
WT OF MOISTURE		
WT OF DISH	_____	_____
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LA F. 9/14/92

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 129</u>	<u>AL 5</u>		<u>Difficult to thread</u>		
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	_____	_____	_____	_____	_____	_____
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	_____	_____	_____	_____
WT OF DRY SOIL			_____	_____	_____	_____
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 114</u>	<u>AL 95</u>	<u>AL 11</u>	<u>could not get adequate blow count</u>		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	_____	_____	_____	_____	<u>(25)</u>	_____
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>	_____	_____	_____
WT OF DRY SOIL						
MOISTURE CONTENT						

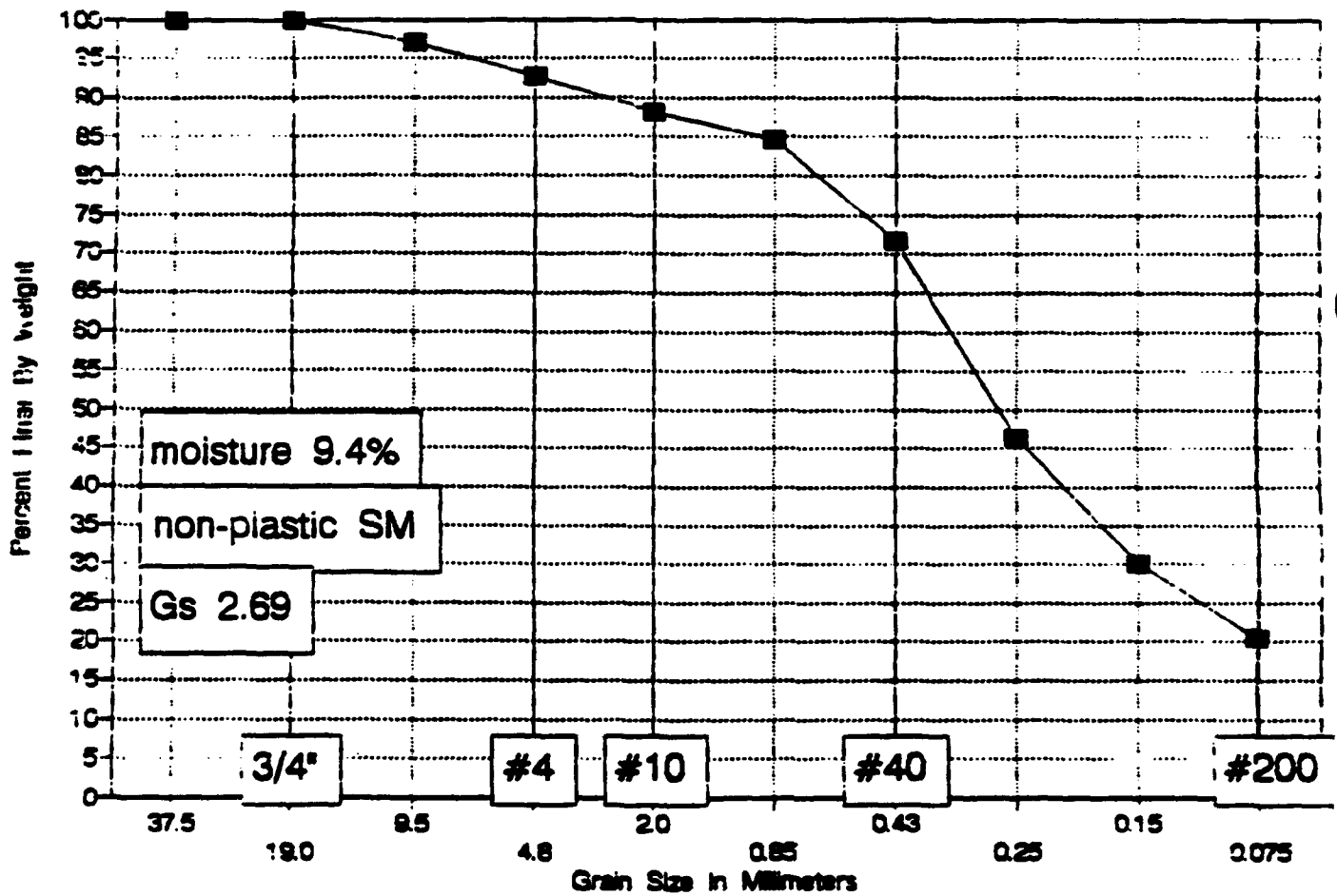


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site EP-01-096, Sample at 3.5 to 4 feet





James M. Montgomery-  
P.O. 2942-0130

Site ID	EP-01-096	Wt soil and dish	171.8
		Dry soil & dish	166.5
Depth	3.5-4 feet	Dish	110
Moisture Content =	9.4		

#### SIEVE ANALYSIS

Dry weight of total sample= 56.5

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	1.6	97.17%	97.2	9.5
# 4	4.2	92.57%	92.6	4.8
# 10	6.7	88.14%	88.1	2.0
# 20	8.7	84.60%	84.6	0.85
# 40	16	71.68%	71.7	0.43
# 60	30.3	46.37%	46.4	0.25
# 100	39.6	29.91%	29.9	0.15
# 200	45	20.35%	20.4	0.075

# MECHANICAL ANALYSIS

SA

DATE 9/3/92 BY LAF  
 JOB NUMBER -6051 OWNER/CLIENT Jm montgomery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 096 DEPTH 3.5-4'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>205</u>
WT. OF RINGS & WET SOIL	<u>0</u>	WT. OF DISH & WET SOIL	<u>171.8</u>
WT. OF RINGS	<u>0</u>	WT. OF DISH & DRY SOIL	<u>166.5</u>
WT. OF WET SOIL	<u>0</u>	WT. OF MOISTURE	<u>0</u>
FIELD DENSITY	<u>0</u>	WT. OF DISH	<u>110.0</u>
DRY DENSITY	<u>0</u>	WT. OF DRY SOIL	<u>0</u>
		FIELD MOISTURE CONTENT	<u>9.4</u>

WASH SEIVE \_\_\_\_\_ DRY SEIVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		1.6		
		#4		4.2		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCU. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		6.7			
		#20		8.7			
		#40		16.0			
		#60		30.3			
		#100		39.6			
		#200		45.0			
		PAN					
		TOTAL					

# ATTENBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO. 456  
 CLIENT/OWNER MR. FRONSON JR.  
 LOCATION SP-01 SAMPLE 005 DEPTH 3.5

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

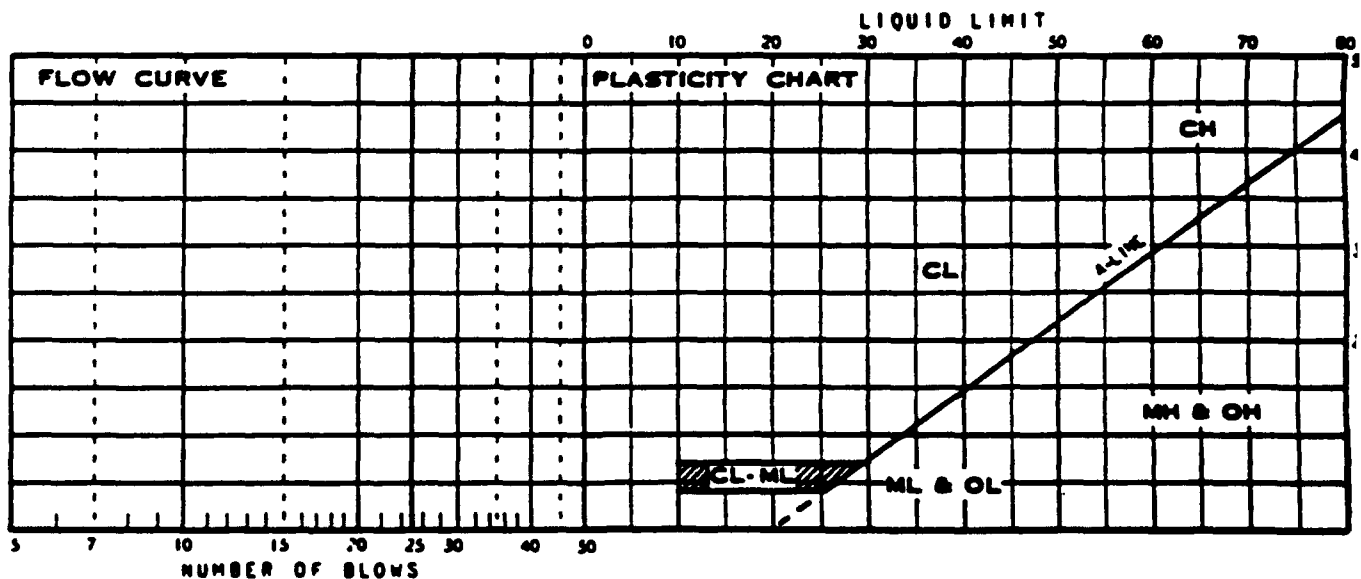
PLASTIC LIMIT BY LA.F.9.9.92

DETERMINATION	1	2	3	4	5	6
DISH	<u>A-4</u>	<u>ALOA</u>	<u>could not thread</u>			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>ALOB</u>	<u>A-B</u>	<u>611</u>	<u>could not get adequate blow count (25)</u>		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						

MOISTURE CONTENT

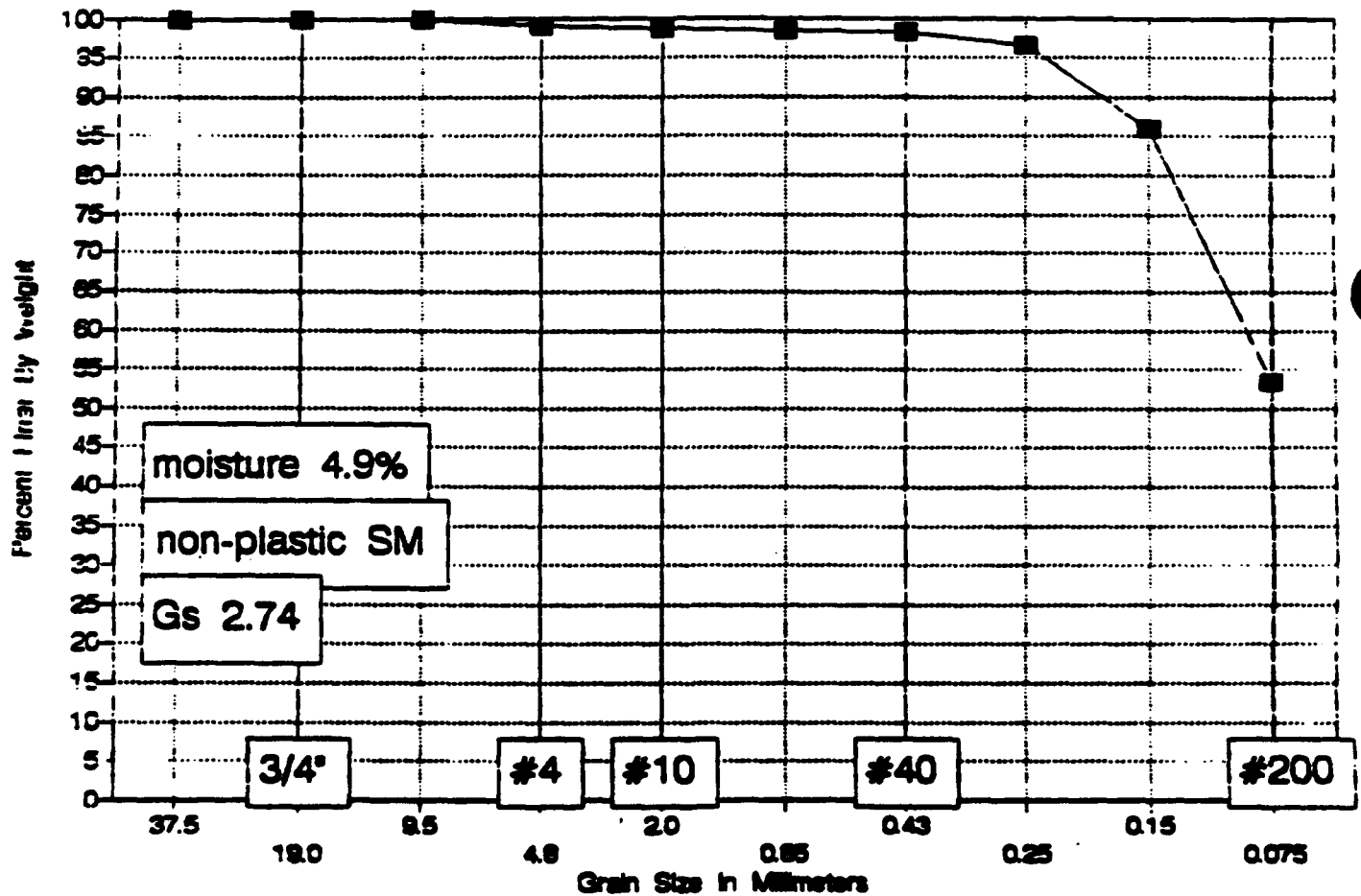


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site EP-01-100, Sample at 5 to 5.5 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	EP-01-100	Wt soil and dish	203.5
Depth	5-5.5 feet	Dry soil & dish	199.1
		Dish	110.1
Moisture Content =	4.9		

#### SIEVE ANALYSIS

Dry weight of total sample= 89

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0.98	98.90%	98.9	4.8
# 10	1.24	98.61%	98.6	2.0
# 20	1.35	98.48%	98.5	0.85
# 40	1.57	98.24%	98.2	0.43
# 60	3.08	96.54%	96.5	0.25
# 100	12.51	85.94%	85.9	0.15
# 200	41.38	53.51%	53.5	0.075

# MECHANICAL ANALYSIS

SA

DATE 5/20/92 BY LAF  
 JOB NUMBER -6221 OWNER/CLIENT Million Corners  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 100 DEPTH 5-5.5'

NUMBER OF RINGS	<u>121g</u>	DISH	<u>207</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>203.5</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>199.1</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>110.1</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>4.9</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		<u>0</u>		
		#4		<u>0.98</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>1.24</u>			
		#20		<u>1.35</u>			
		#40		<u>1.57</u>			
		#60		<u>3.08</u>			
		#100		<u>12.51</u>			
		#200		<u>41.38</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING EP-01 SAMPLE 100 DEPTH 3-33

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

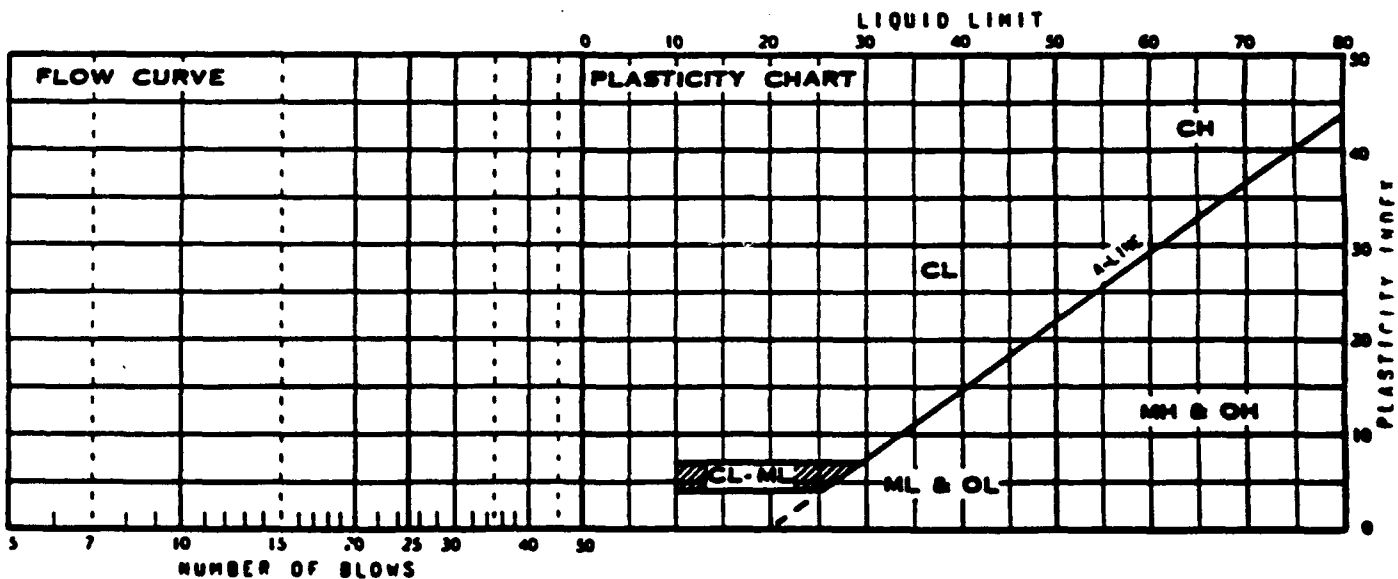
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE.02092

DETERMINATION	1	2	3	4	5	6
DISH	4.105	A-7	difficult to thread			
WT OF DISH + WET SOIL	11.13	10.72				
WT OF DISH + DRY SOIL	9.51	9.16				
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT	19.98	20.10	$\bar{x}=20$			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL122	AL113	AL119	could not get adequate blow count		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT						

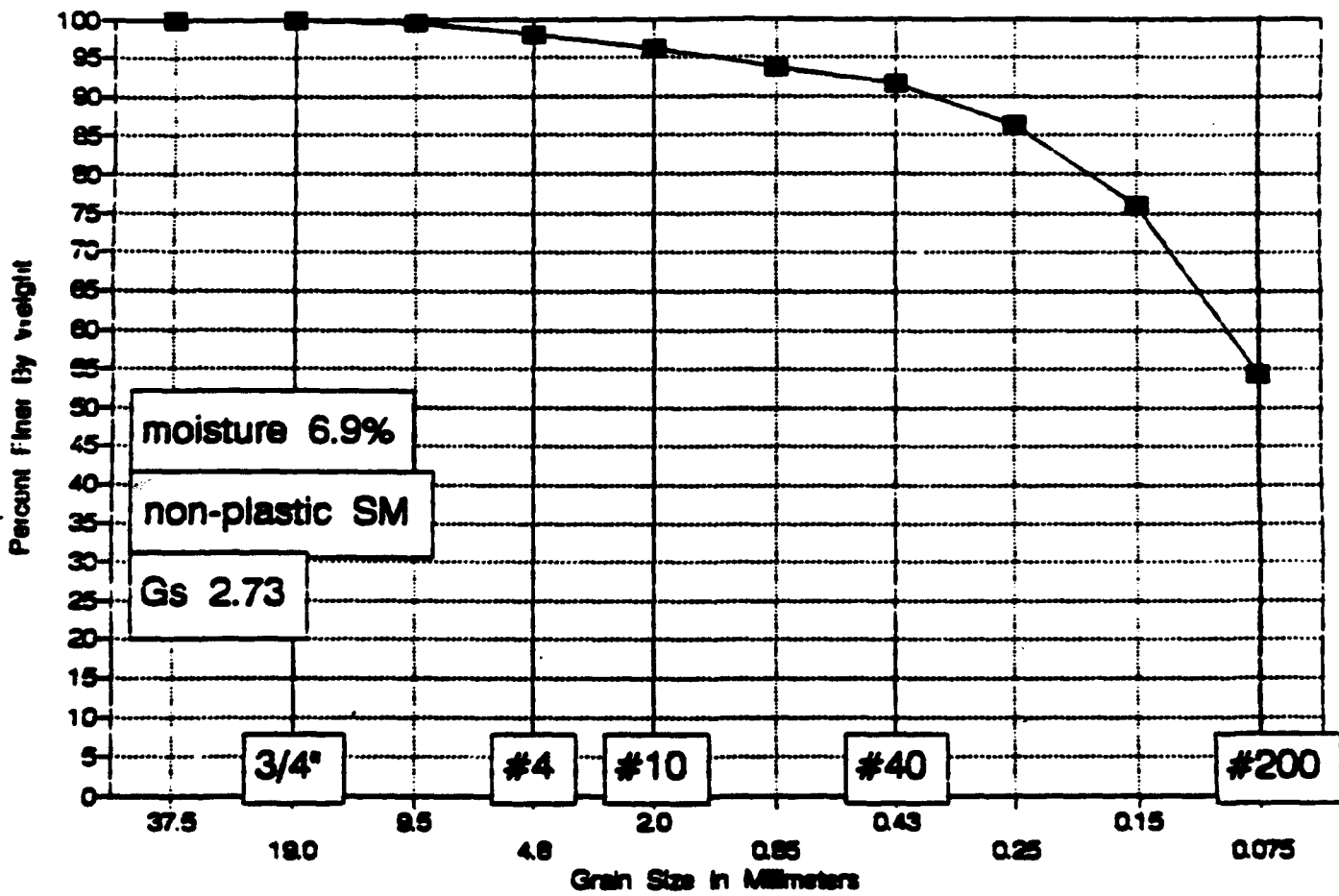


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
			20		NP

# GRADATION CURVE

Site EP-01-104, Sample at 3 to 4 feet





James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-104

Depth 3-4 feet

Moisture Content = 6.9

Wt soil and dish	163.5
Dry soil & dish	159.6
Dish	102.8

### SIEVE ANALYSIS

Dry weight of total sample= 56.8

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0.3	99.47%	99.5	9.5
# 4	1.1	98.06%	98.1	4.8
# 10	2.2	96.13%	96.1	2.0
# 20	3.5	93.84%	93.8	0.85
# 40	4.7	91.73%	91.7	0.43
# 60	7.8	86.27%	86.3	0.25
# 100	13.6	76.06%	76.1	0.15
# 200	25.9	54.40%	54.4	0.075

# MECHANICAL ANALYSIS

SA

DATE 9/3/92

BY LAF

JOB NUMBER -6001

OWNER/CLIENT Jm montgomery

LOCATION \_\_\_\_\_

BORING EP-01

SAMPLE 104

DEPTH 3-4'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>96</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>163.5</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>159.6</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>102.8</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>6.9</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		.3		
		#4		1.1		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		2.2			
		#20		3.5			
		#40		4.7			
		#60		7.8			
		#100		13.6			
		#200		25.9			
		PAN					
		TOTAL					

# ATTENBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO. - 6031  
 CLIENT/OWNER JM Hinton, Inc.  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 10A DEPTH 3'-4"

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

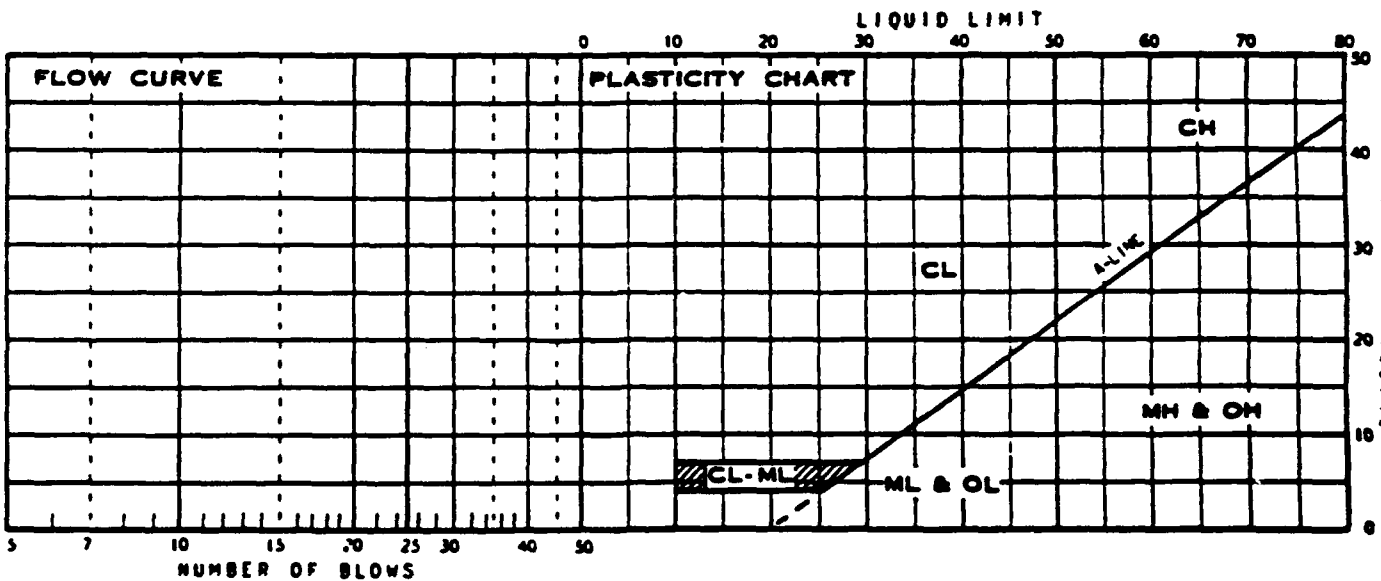
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LA.F. 9.992

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 97</u>	<u>AL 116</u>	<u>difficult to thread (sandy)</u>			
WT OF DISH + WET SOIL	<u>12.78</u>	<u>15.24</u>				
WT OF DISH + DRY SOIL	<u>10.61</u>	<u>12.82</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT	<u>20.94</u>	<u>21.19</u>	<u><math>\bar{x} = 21</math></u>			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 109</u>	<u>183</u>	<u>9A</u>	<u>could not get adequate blow count (25)</u>		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						

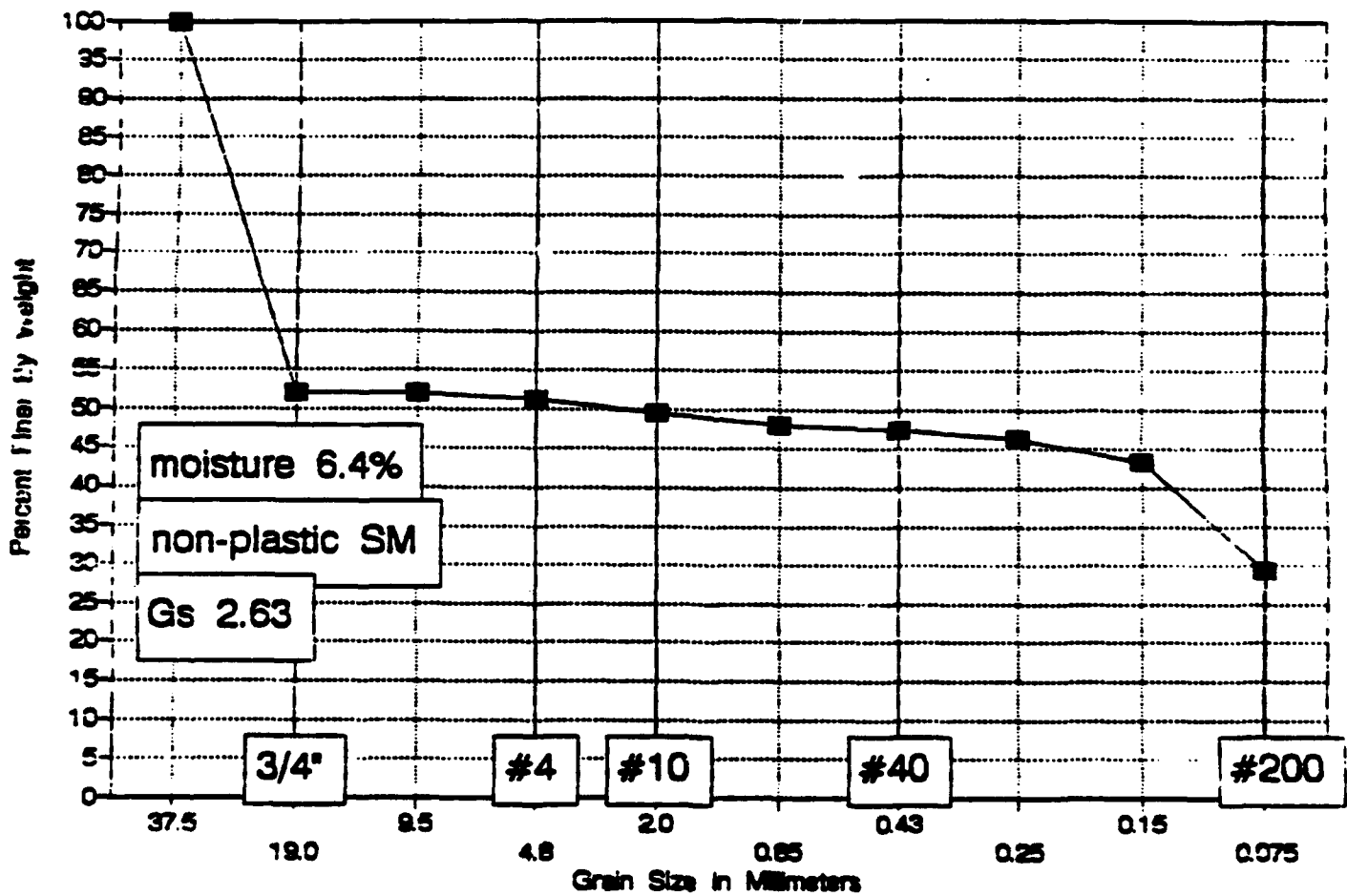


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
			<u>21</u>		<u>NP</u>

# GRADATION CURVE

Site EP-01-105, Sample at 7 to 8 feet



AD-A282 374

TOOELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES 5NN05

13/15

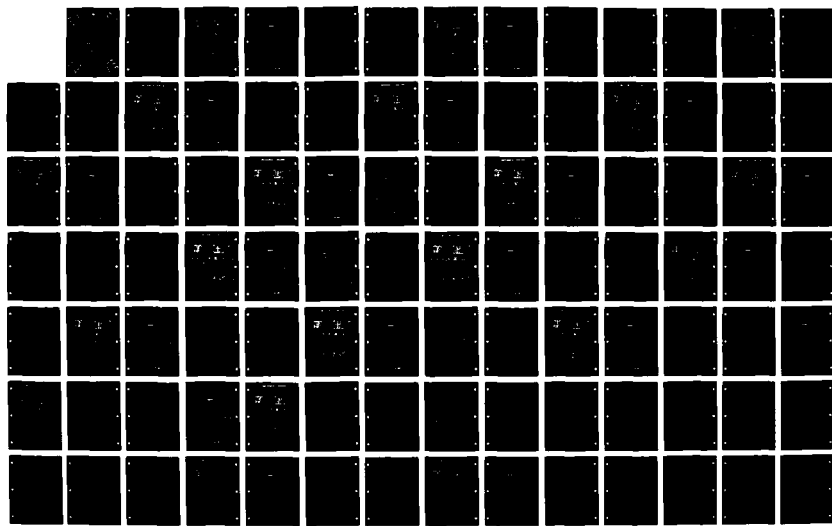
VOLUME 2 APPENDICES A - J REVISION(U) MONTGOMERY

WATSON WALNUT CREEK CA DEC 93 XA-USAEC

UNCLASSIFIED

DAAR15-90-D-0011

NL

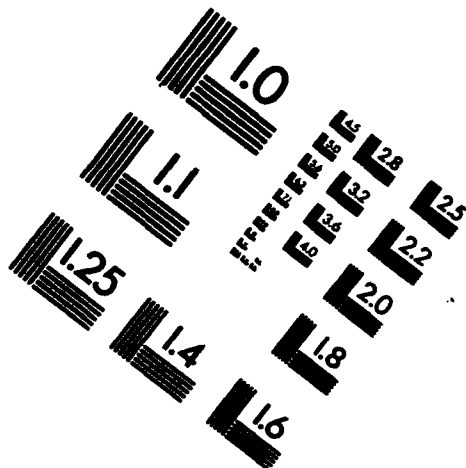
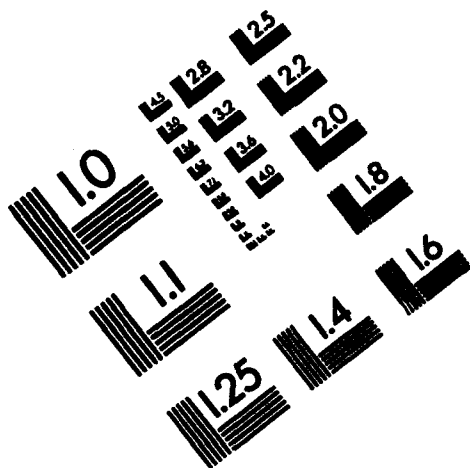




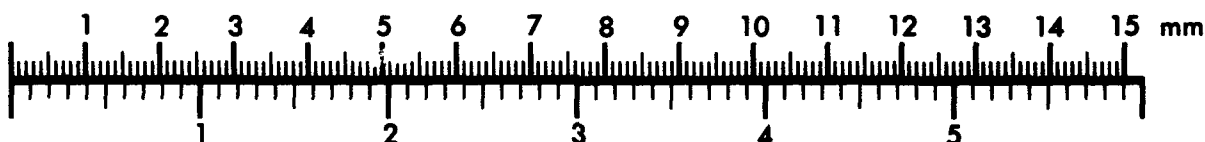
AIM

Association for Information and Image Management

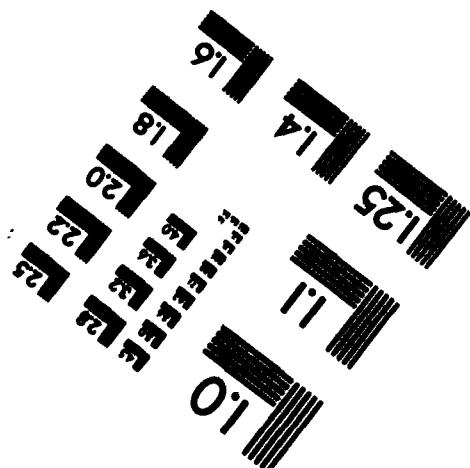
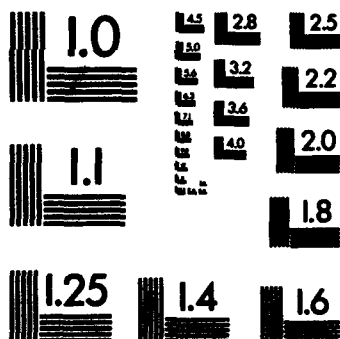
1100 Wayne Avenue, Suite 1100  
Silver Spring, Maryland 20910  
301/587-8202



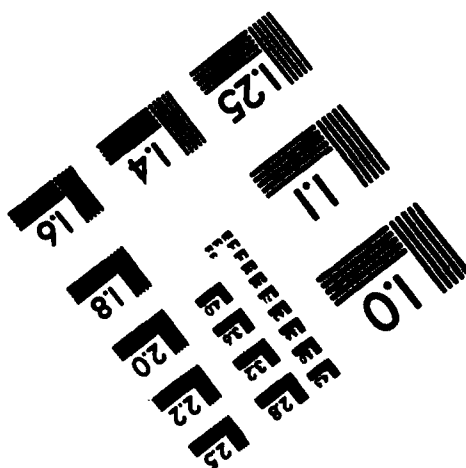
Centimeter



Inches



MANUFACTURED TO AIM STANDARDS  
BY APPLIED IMAGE, INC.



James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-105

Depth 7-8 feet

Moisture Content = 6.4

Wt soil and dish	202.3
Dry soil & dish	196.7
Dish	109.4

### SIEVE ANALYSIS

Dry weight of total sample= 87.3

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	41.9	52.00%	52.0	19.0
3/8 inch	41.9	52.00%	52.0	9.5
# 4	42.6	51.20%	51.2	4.8
# 10	44.1	49.48%	49.5	2.0
# 20	45.4	48.00%	48.0	0.85
# 40	45.9	47.42%	47.4	0.43
# 60	46.8	46.39%	46.4	0.25
# 100	49.4	43.41%	43.4	0.15
# 200	61.6	29.44%	29.4	0.075

# MECHANICAL ANALYSIS

DATE 9/3/92 BY LAE  
 JOB NUMBER -6061 OWNER/CLIENT Jim Montgomery  
 LOCATION \_\_\_\_\_  
 BORING EP-01 SAMPLE 105 DEPTH 7-8'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>305</u>
WT. OF RINGS & WET SOIL	<u>/</u>	WT. OF DISH & WET SOIL	<u>202.3</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>196.7</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>109.4</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>6.4</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		<u>0</u>		
		3/4"		<u>41.9</u>		
		3/8"		<u>41.9</u>		
		#4		<u>42.6</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>44.1</u>			
		#20		<u>45.4</u>			
		#40		<u>45.9</u>			
		#60		<u>46.8</u>			
		#100		<u>49.4</u>			
		#200		<u>61.6</u>			
		PAN					
		TOTAL					



# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. -6051  
CLIENT/OWNER JRM Montzomery  
LOCATION \_\_\_\_\_  
BORING EP-01 SAMPLE 105 DEPTH 7.5'

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	_____	_____
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

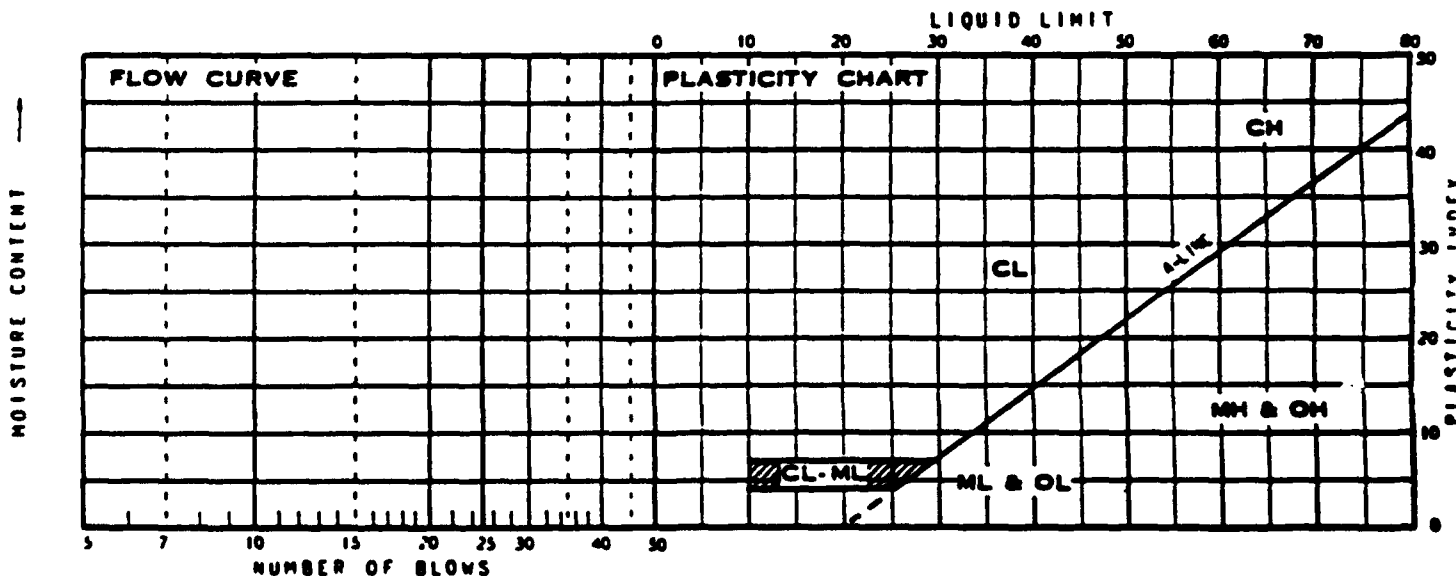
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	_____	_____
WT OF MOISTURE		
WT OF DISH	_____	_____
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE-98992

DETERMINATION	1	2	3	4	5	6
DISH	<u>A-9</u>	<u>20</u>	<u>could not thread (silty)</u>			
WT OF DISH + WET SOIL	_____	_____	_____	_____	_____	_____
WT OF DISH + DRY SOIL	_____	_____	_____	_____	_____	_____
WT OF MOISTURE	_____	_____	_____	_____	_____	_____
WT OF DISH	<u>1.4</u>	<u>1.4</u>	_____	_____	_____	_____
WT OF DRY SOIL	_____	_____	_____	_____	_____	_____
MOISTURE CONTENT	_____	_____	_____	_____	_____	_____

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL96</u>	<u>AL100</u>	<u>A-4</u>	<u>could not get adequate blow count (25)</u>		
NUMBER OF BLOWS	_____	_____	_____	_____	_____	_____
WT OF DISH + WET SOIL	_____	_____	_____	_____	_____	_____
WT OF DISH + DRY SOIL	_____	_____	_____	_____	_____	_____
WT OF MOISTURE	_____	_____	_____	_____	_____	_____
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>	_____	_____	_____
WT OF DRY SOIL	_____	_____	_____	_____	_____	_____
MOISTURE CONTENT	_____	_____	_____	_____	_____	_____

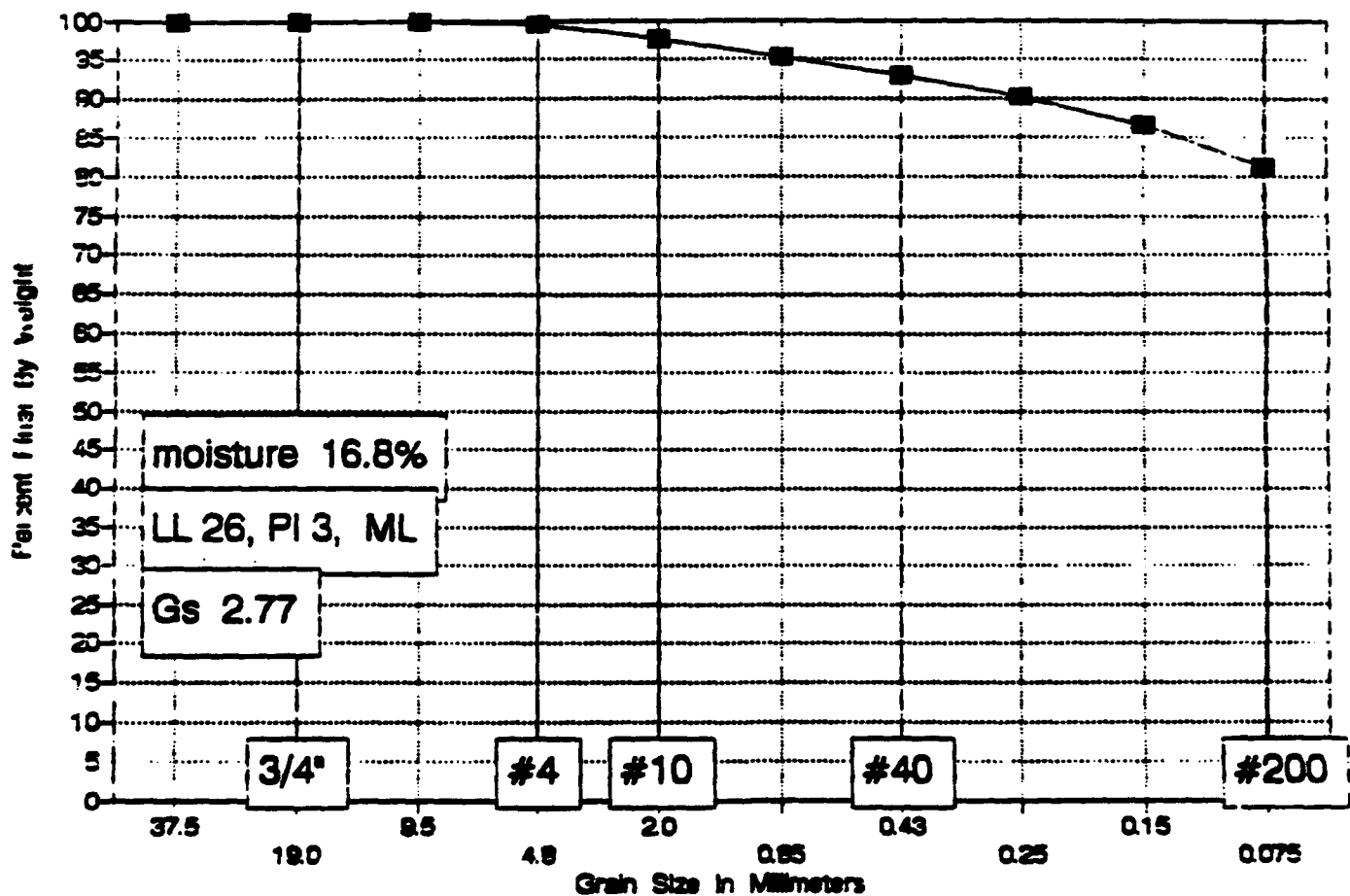


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site EP-01-118, Sample at 5.5 to 6 feet



James M. Montgomery  
P.O. 2942-0130

Site ID EP-01-118

Depth 5.5-6 feet

Moisture Content = 16.8

Wt soil and dish 171  
Dry soil & dish 162.  
Dish 107.2

#### SIEVE ANALYSIS

Dry weight of total sample= 55.2

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0.29	99.47%	99.5	4.8
# 10	1.33	97.59%	97.6	2.0
# 20	2.65	95.20%	95.2	0.85
# 40	3.86	93.01%	93.0	0.43
# 60	5.41	90.20%	90.2	0.25
# 100	7.35	86.68%	86.7	0.15
# 200	10.38	81.20%	81.2	0.075

# MECHANICAL ANALYSIS

SH

DATE 5-20-58 BY AE  
 JOB NUMBER -6551 OWNER/CLIENT UNITED STATES ARMY  
 LOCATION \_\_\_\_\_  
 BORING ED-01 SAMPLE 116 DEPTH 5.5-6'

NUMBER OF RINGS	<u>12.7</u>	DISH	<u>172</u>
WT. OF RINGS & WET SOIL	<u>171.7</u>	WT. OF DISH & WET SOIL	<u>171.7</u>
WT. OF RINGS	<u>162.4</u>	WT. OF DISH & DRY SOIL	<u>162.4</u>
WT. OF WET SOIL	<u>107.2</u>	WT. OF MOISTURE	<u>107.2</u>
FIELD DENSITY		WT. OF DISH	<u>107.2</u>
DRY DENSITY		WT. OF DRY SOIL	<u>16.8</u>
		FIELD MOISTURE CONTENT	<u>16.8</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		0.29		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		1.33			
		#20		2.65			
		#40		3.86			
		#60		5.41			
		#100		7.35			
		#200		10.38			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
 LABORATORY CLASSIFICATION \_\_\_\_\_

LOG NO. 66  
 CONTRACTOR ATKINS-CONCRETE  
 LOCATION \_\_\_\_\_  
 BORING EP-2 SAMPLE 119 DEPTH 55-6'

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	_____	_____
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

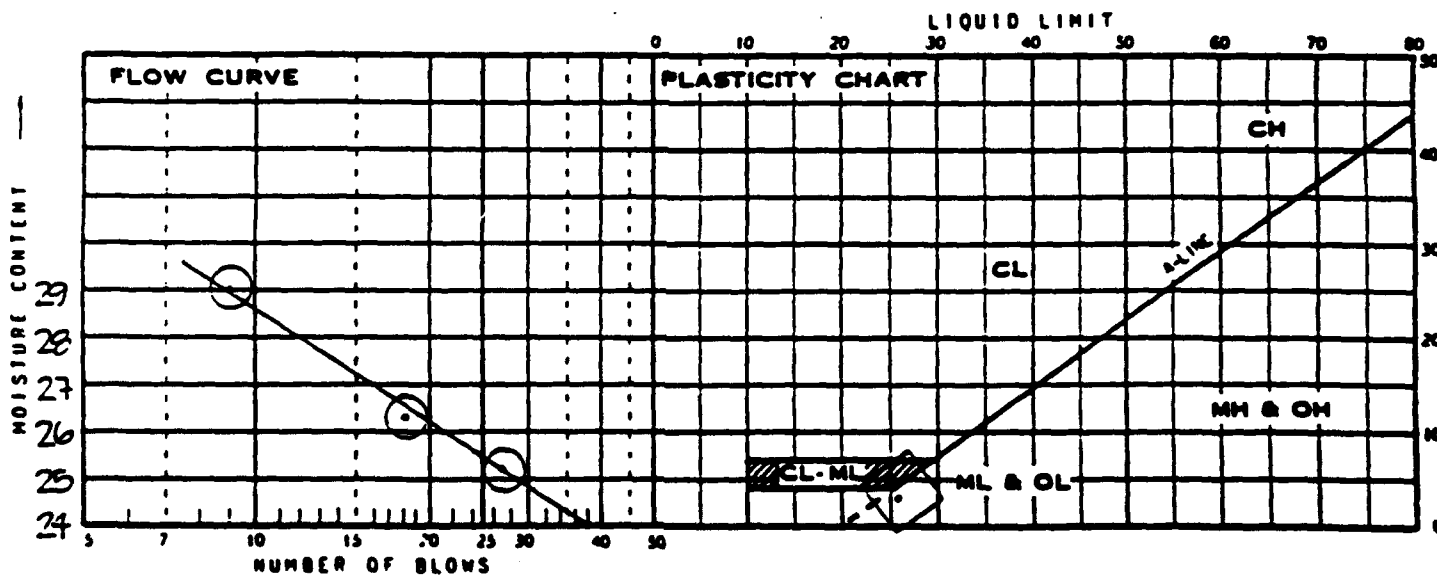
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	_____	_____
WT OF MOISTURE		
WT OF DISH	_____	_____
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY CAE. B. 2592

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL94</u>	<u>AL132</u>				
WT OF DISH + WET SOIL	<u>14.75</u>	<u>12.42</u>				
WT OF DISH + DRY SOIL	<u>11.85</u>	<u>10.36</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT	<u>22.97</u>	<u>22.99</u>	<u><math>\bar{x} = 23</math></u>			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL91</u>	<u>9A</u>	<u>AL119</u>			
NUMBER OF BLOWS	<u>27</u>	<u>18</u>	<u>9</u>			
WT OF DISH + WET SOIL	<u>9.71</u>	<u>10.18</u>	<u>12.51</u>			
WT OF DISH + DRY SOIL	<u>8.04</u>	<u>8.35</u>	<u>10.01</u>			
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT	<u>25.15</u>	<u>26.33</u>	<u>29.04</u>			



SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		<u>26</u>	<u>23</u>	<u>3</u>	<u>ML</u>

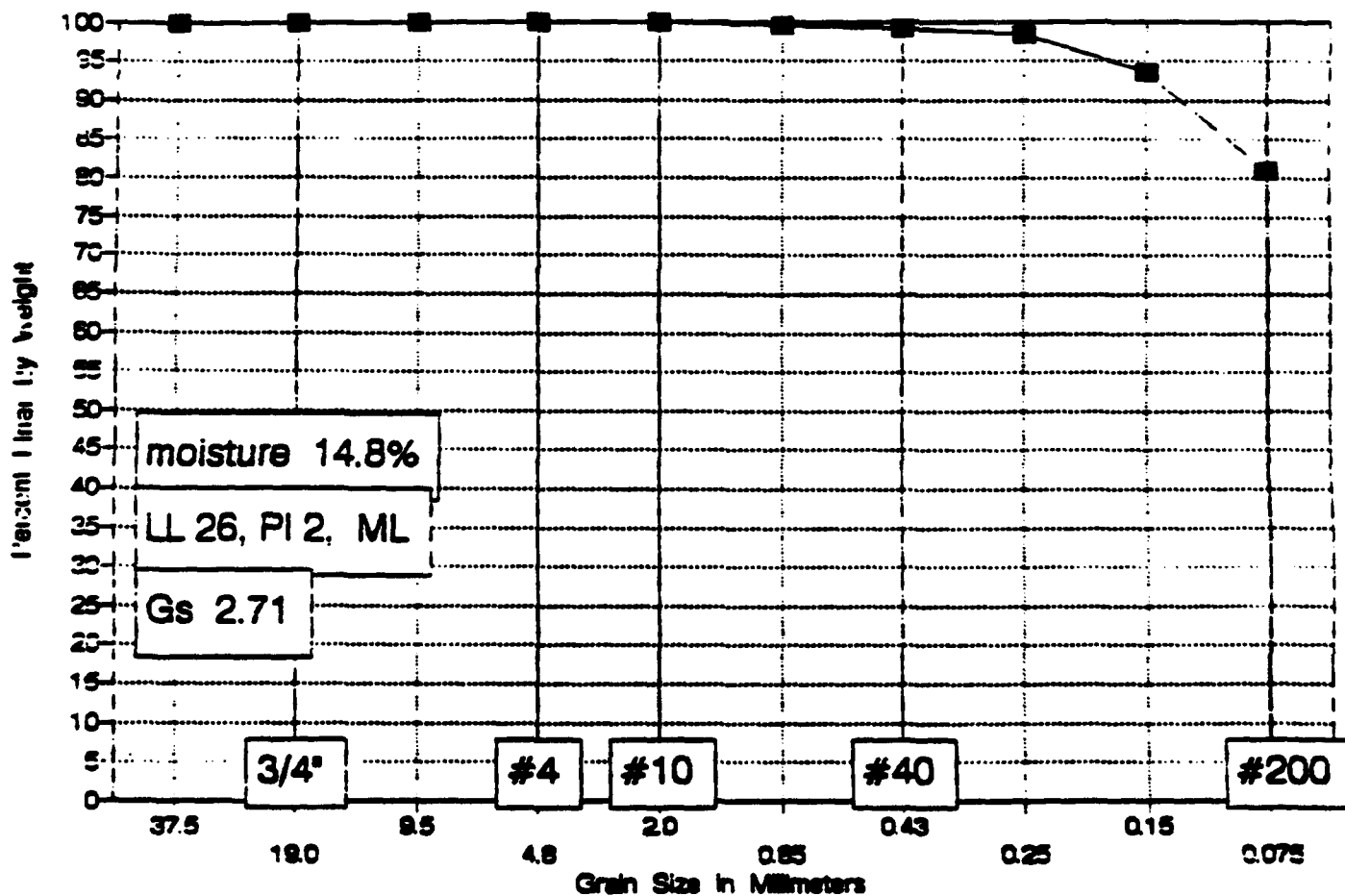
**DEEP SOIL BORING SAMPLES**

**OB/OD AREA**

**(SWMUs 1, 1a, 1b, 1c, 1d)**

# GRADATION CURVE

Site SB-01-001, Sample at 20 feet



James M. Montgomery  
P.O. 2942-C130

Site ID	SB-01-001	Wt soil and dish	377.3
		Dry soil & dish	342.7
Depth	20 feet	Dish	109.6
Moisture Content =		14.8	

#### SIEVE ANALYSIS

Dry weight of total sample= 233.1

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.1	99.96%	100.0	2.0
# 20	1	99.57%	99.6	0.85
# 40	2	99.14%	99.1	0.43
# 60	3.5	98.50%	98.5	0.25
# 100	15	93.56%	93.6	0.15
# 200	44.1	81.08%	81.1	0.075



# MECHANICAL ANALYSIS

CA

DATE 8/20/92 BY LAF  
 JOB NUMBER -6061 OWNER/CLIENT JM 1111-CONCRETE  
 LOCATION \_\_\_\_\_  
 BORING GB-01 SAMPLE 001 DEPTH 20'

NUMBER OF RINGS	<u>1/100</u>	DISH	<u>209</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>377.3</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>342.7</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>109.6</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>14.8</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		<u>0</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>.1</u>			
		#20		<u>1.0</u>			
		#40		<u>2.0</u>			
		#60		<u>3.5</u>			
		#100		<u>15.0</u>			
		#200		<u>44.1</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

FIELD DENSITY BY

JOB NO. 03461-079-205  
CLIENT/OWNER JH77701-277501  
LOCATION  
BORING 55-01 SAMPLE 001 DEPTH 1.0

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

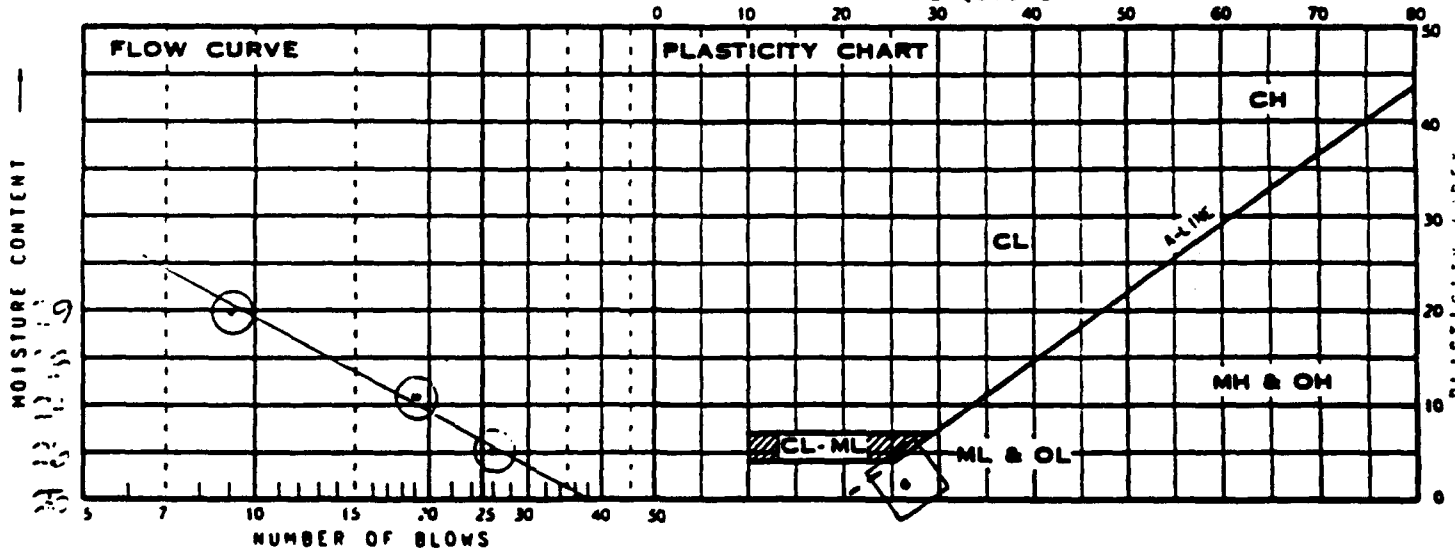
PLASTIC LIMIT BY U.F. 82002

DETERMINATION	1	2	3	4	5	6
DISH	AL110	70				
WT OF DISH + WET SOIL	18.90	18.98				
WT OF DISH + DRY SOIL	15.46	15.52				
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT	23.76	23.80	X=24			

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	9A	AL114	AL130			
NUMBER OF BLOWS	26	9	9			
WT OF DISH + WET SOIL	12.30	9.83	13.57			
WT OF DISH + DRY SOIL	10.05	8.03	10.85			
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT	26.01	27.15	28.99			

## LIQUID LIMIT

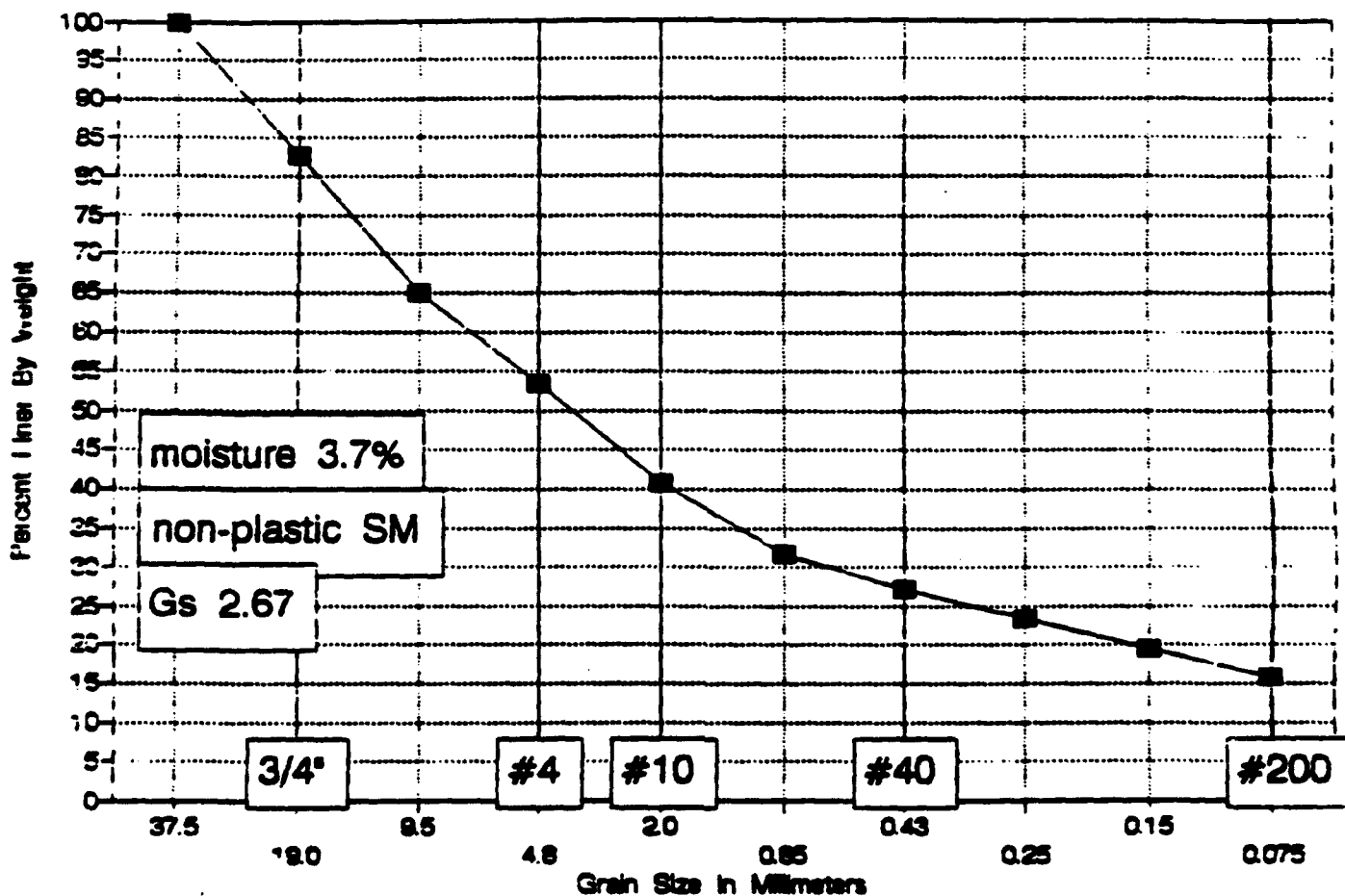


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		26	24	2	ML

# GRADATION CURVE

Site SB-01-002, Sample at 15 feet



James M. Montgomery  
P.O. 2942-0130

Site ID SB-01-002

Depth 15 feet

Moisture Content = 3.7

Wt soil and dish	308.1
Dry soil & dish	300.9
Dish	106.1

#### SIEVE ANALYSIS

Dry weight of total sample= 194.8

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	33.69	82.71%	82.7	19.0
3/8 inch	68.13	65.03%	65.0	9.5
# 4	90.52	53.53%	53.5	4.8
# 10	115.41	40.75%	40.8	2.0
# 20	133.07	31.69%	31.7	0.85
# 40	141.88	27.17%	27.2	0.43
# 60	149.35	23.33%	23.3	0.25
# 100	156.74	19.54%	19.5	0.15
# 200	164.11	15.75%	15.8	0.075

# MECHANICAL ANALYSIS

54-

DATE 2-2-51

BY L.F.

JOB NUMBER -5021

OWNER/CLIENT Jim Morrison, Ky

LOCATION \_\_\_\_\_

BORING GB-01

SAMPLE 002

DEPTH 15'

NUMBER OF RINGS	<u>12.7</u>	DISH	<u>91</u>
WT. OF RINGS & WET SOIL	<u>306.1</u>	WT. OF DISH & WET SOIL	<u>306.1</u>
WT. OF RINGS	<u>300.2</u>	WT. OF DISH & DRY SOIL	<u>300.2</u>
WT. OF WET SOIL		WT. OF MOISTURE	<u>106.1</u>
FIELD DENSITY		WT. OF DISH	<u>106.1</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>3.7</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		<u>0</u>		
		3/4"		<u>33.69</u>		
		3/8"		<u>60.13</u>		
		#4		<u>90.52</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>115.41</u>			
		#20		<u>133.04</u>			
		#40		<u>141.86</u>			
		#60		<u>149.35</u>			
		#100		<u>156.74</u>			
		#200		<u>164.11</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. \_\_\_\_\_  
CLIENT/OWNER \_\_\_\_\_  
LOCATION \_\_\_\_\_  
BORING BB-0 SAMPLE 001 DEPTH 5

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	_____	_____
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

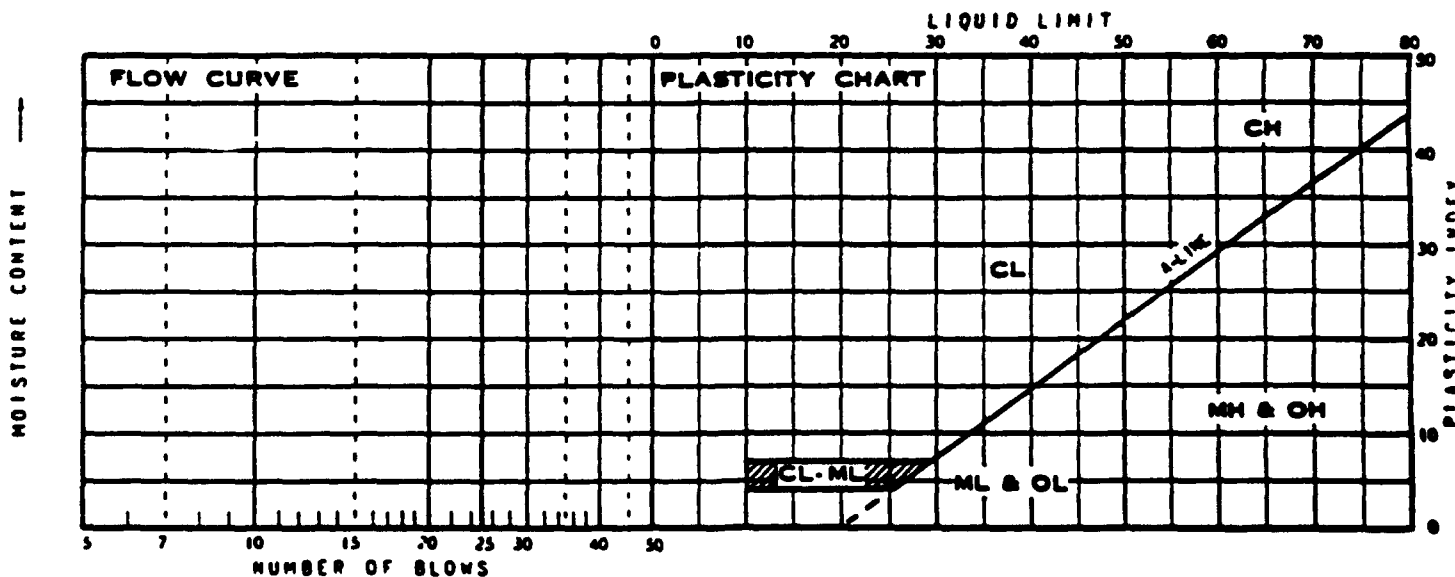
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	_____	_____
WT OF MOISTURE		
WT OF DISH	_____	_____
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY U.F. 82492

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL12A</u>	<u>AL82</u>	<u>COULD NOT THREAD</u>			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH						
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>A-2</u>	<u>AL107</u>	<u>AL132</u>	<u>COULD NOT TEST</u>		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH						
WT OF DRY SOIL						
MOISTURE CONTENT						

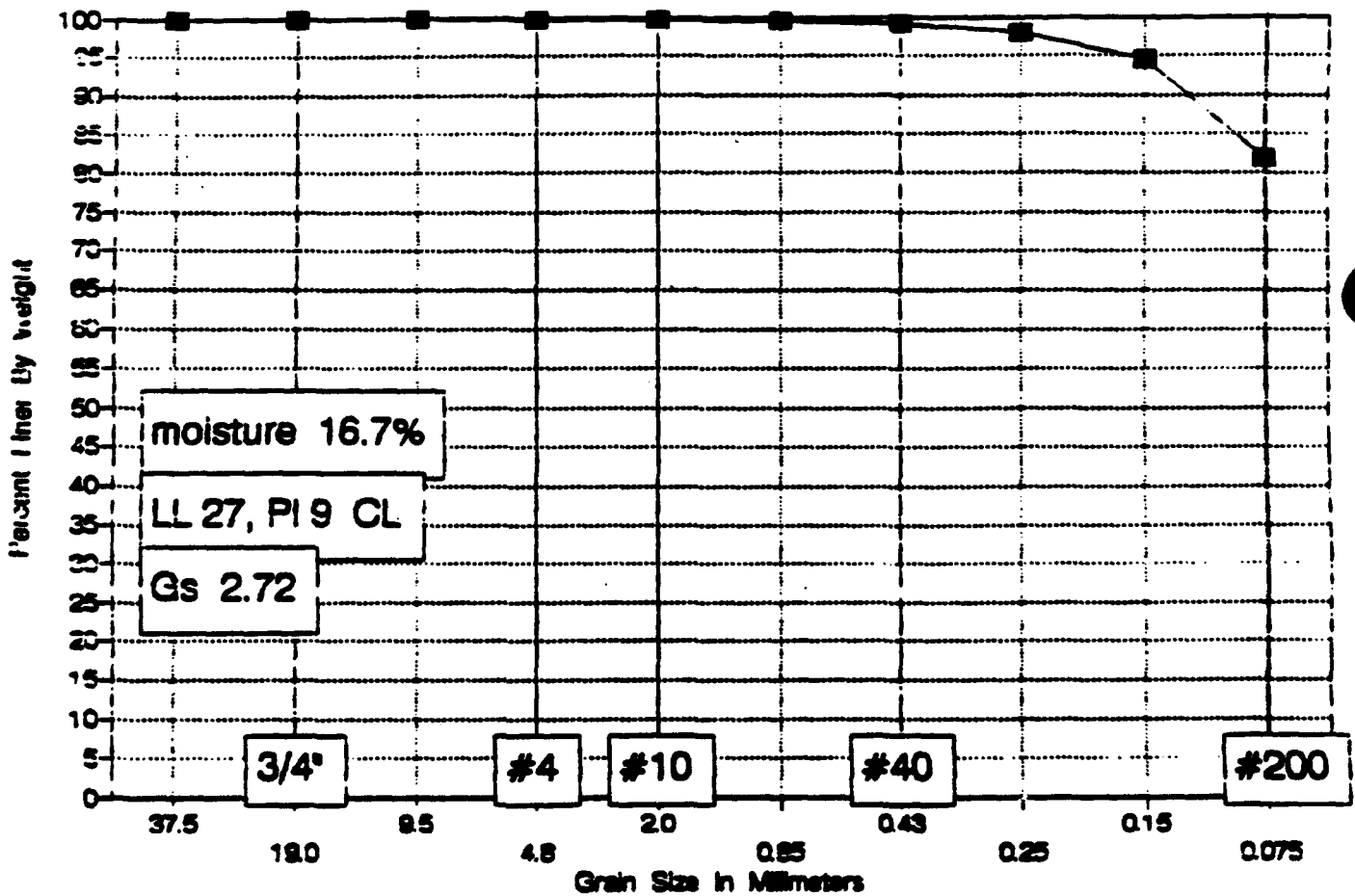


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site SB-01-003, Sample at 10 feet



James M. Montgomery  
P.O. 2942-0130

Site ID SB-01-003

Depth 10 feet

Moisture Content = 16.7

Wt soil and dish	477
Dry soil & dish	424.6
Dish	110

### SIEVE ANALYSIS

Dry weight of total sample= 314.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0.59	99.81%	99.8	4.8
# 10	0.84	99.73%	99.7	2.0
# 20	1.32	99.58%	99.6	0.85
# 40	2.36	99.25%	99.2	0.43
# 60	6.15	98.05%	98.0	0.25
# 100	17.48	94.44%	94.4	0.15
# 200	56.78	81.95%	82.0	0.075



# MECHANICAL ANALYSIS

SA-

DATE 9/20/82 BY LAF  
 JOB NUMBER -6051 OWNER/CLIENT Jm Maritzomery  
 LOCATION \_\_\_\_\_  
 BORING 3F-01 SAMPLE 003 DEPTH 10'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>125</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>437.0</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>424.6</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>110.0</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>16.7</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		<u>0</u>		
		#4		<u>0.59</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>0.84</u>			
		#20		<u>1.32</u>			
		#40		<u>2.36</u>			
		#60		<u>6.15</u>			
		#100		<u>17.48</u>			
		#200		<u>56.76</u>			
		PAN					
		TOTAL					

# ATZBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO. 0051  
 CLIENT/OWNER JMIRIANTSON CORP  
 LOCATION EDRING 33-01 SAMPLE 203 DEPTH 10'

FIELD DENSITY BY                     

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

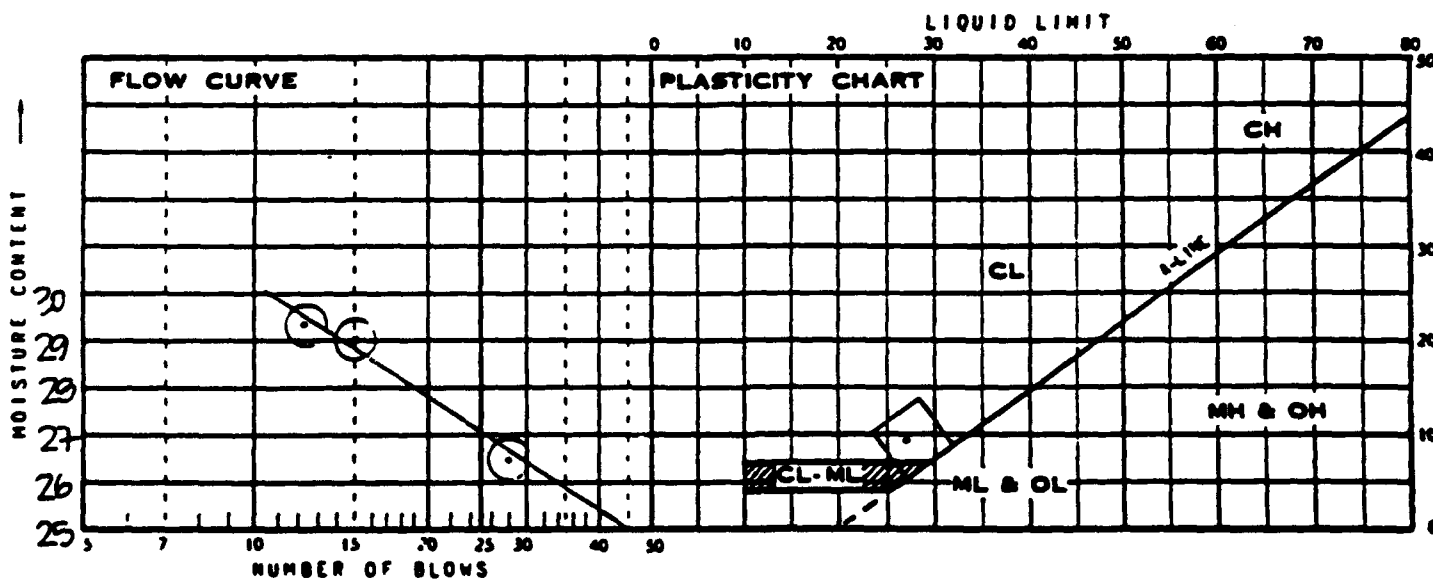
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY W.F. 9/25/92

DETERMINATION	1	2	3	4	5	6
DISH	AL122	AL112				
WT OF DISH + WET SOIL	18.00	17.58				
WT OF DISH + DRY SOIL	15.44	15.09				
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT	18.23	18.19	X=18			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL97	AL106	AL92			
NUMBER OF BLOWS	28	15	12			
WT OF DISH + WET SOIL	11.32	11.39	10.75			
WT OF DISH + DRY SOIL	9.56	9.45	8.63			
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT	26.47	29.07	29.32			

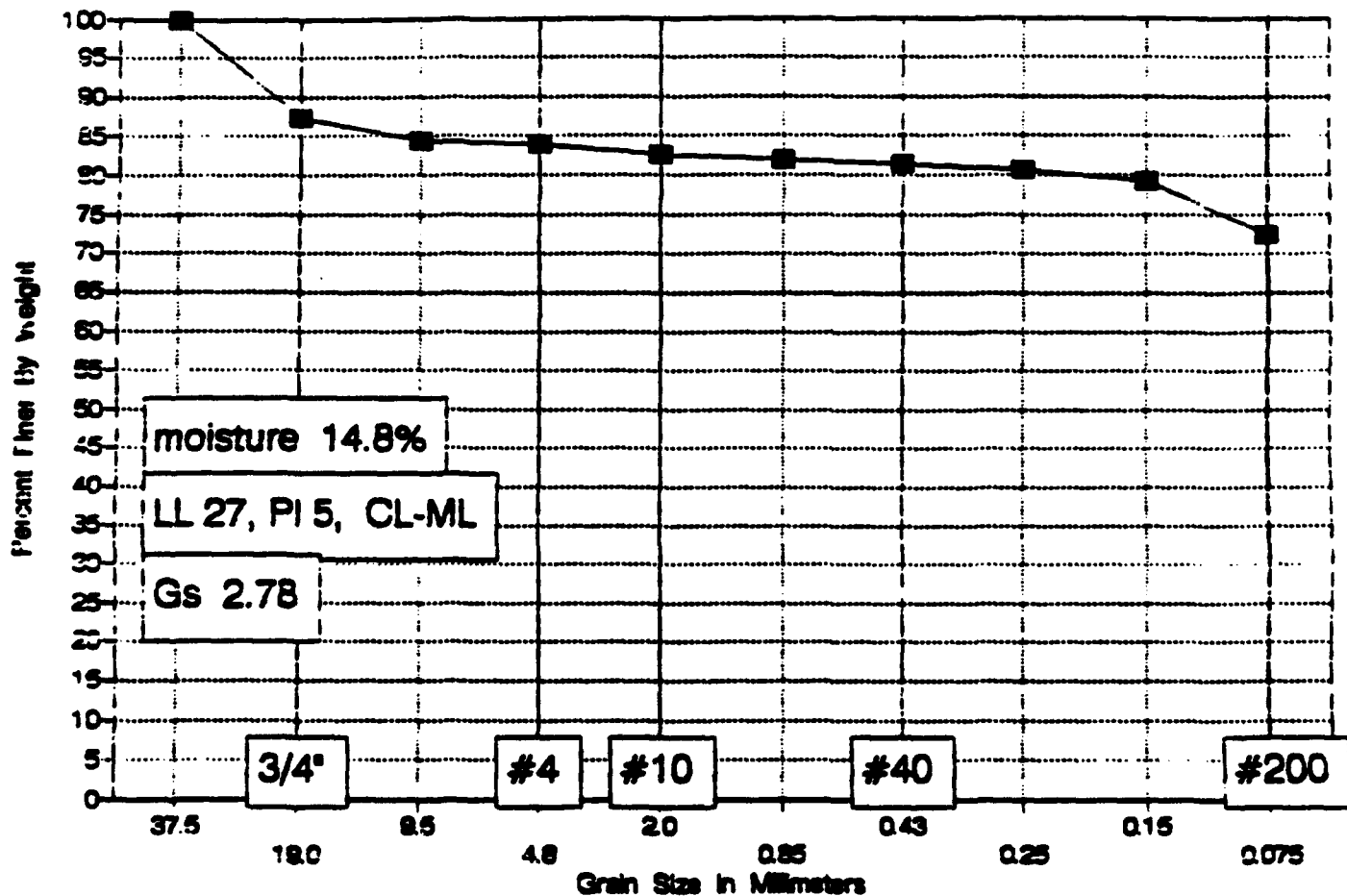


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		27	18	9	CL

# GRADATION CURVE

Site SB-01-004, Sample at 20 feet



James M. Montgomery  
P.O. 2942-0130

Site ID SB-01-004

Depth .20 feet

Moisture Content = 14.8

Wt soil and dish	353.4
Dry soil & dish	322.1
Dish	110.7

#### SIEVE ANALYSIS

Dry weight of total sample= 211.4

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	26.51	87.46%	87.5	19.0
3/8 inch	33.11	84.34%	84.3	9.5
# 4	34.24	83.80%	83.8	4.8
# 10	36.72	82.63%	82.6	2.0
# 20	37.88	82.08%	82.1	0.85
# 40	39.19	81.46%	81.5	0.43
# 60	40.95	80.63%	80.6	0.25
# 100	44.12	79.13%	79.1	0.15
# 200	58.15	72.49%	72.5	0.075

# MECHANICAL ANALYSIS

34

DATE 5/20/92 BY LAF  
 JOB NUMBER -6051 OWNER/CLIENT Jim Montgomery  
 LOCATION \_\_\_\_\_  
 BORING SB-01 SAMPLE 004 DEPTH 20'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>213</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>353.4</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>322.1</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>110.7</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>48</u>

WASH SEIVE \_\_\_\_\_ DRY SEIVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		<u>0</u>		
		3/4"		<u>26.51</u>		
		3/8"		<u>33.11</u>		
		#4		<u>34.24</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>36.72</u>			
		#20		<u>37.88</u>			
		#40		<u>39.19</u>			
		#60		<u>40.95</u>			
		#100		<u>44.12</u>			
		#200		<u>50.15</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
 LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. 1005  
 CLIENT/OWNER 17700000000000000000  
 LOCATION \_\_\_\_\_  
 BORING SB-01 SAMPLE 001 DEPTH 20'

FIELD DENSITY BY: \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	_____	_____
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

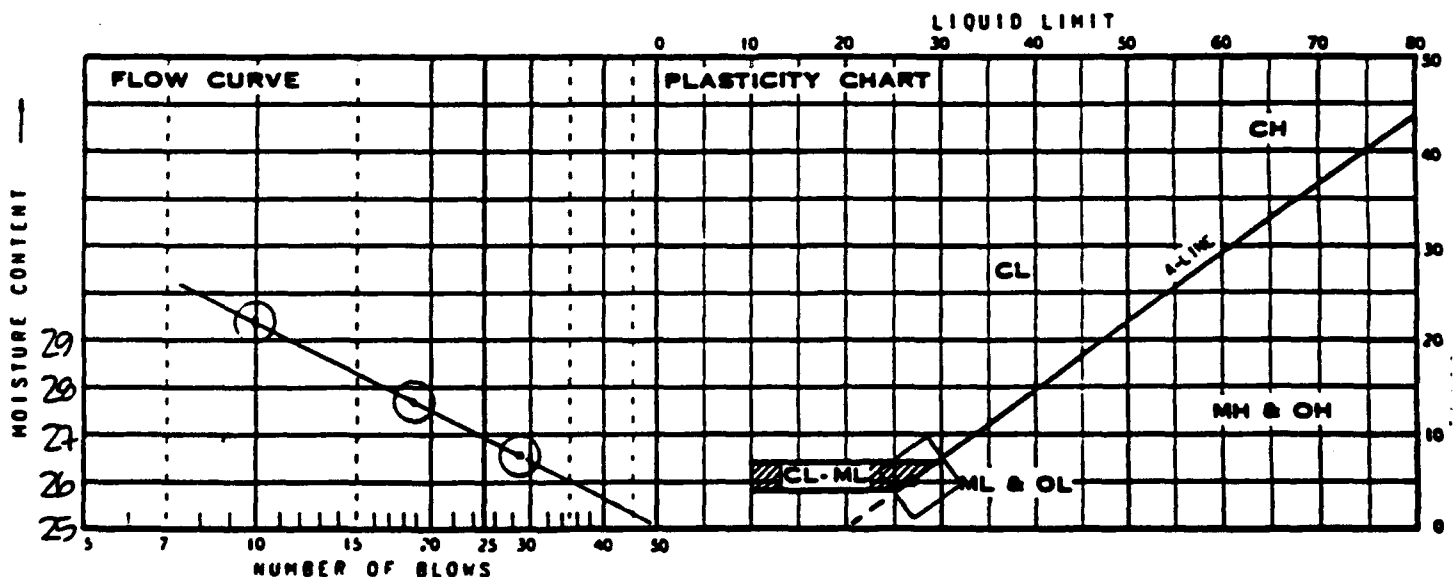
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	_____	_____
WT OF MOISTURE		
WT OF DISH	_____	_____
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE. 02492

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL13A</u>	<u>AL120</u>				
WT OF DISH + WET SOIL	<u>16.28</u>	<u>14.27</u>				
WT OF DISH + DRY SOIL	<u>13.58</u>	<u>11.95</u>	_____	_____	_____	_____
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	_____	_____	_____	_____
WT OF DRY SOIL						
MOISTURE CONTENT	<u>22.17</u>	<u>21.99</u>	<u>Σ=22</u>			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>30</u>	<u>AL105</u>	<u>AL114</u>			
NUMBER OF BLOWS	<u>29</u>	<u>19</u>	<u>10</u>			
WT OF DISH + WET SOIL	<u>11.62</u>	<u>13.45</u>	<u>11.84</u>			
WT OF DISH + DRY SOIL	<u>9.47</u>	<u>10.83</u>	<u>9.47</u>	_____	_____	_____
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>	_____	_____	_____
WT OF DRY SOIL						
MOISTURE CONTENT	<u>26.64</u>	<u>27.76</u>	<u>29.37</u>			

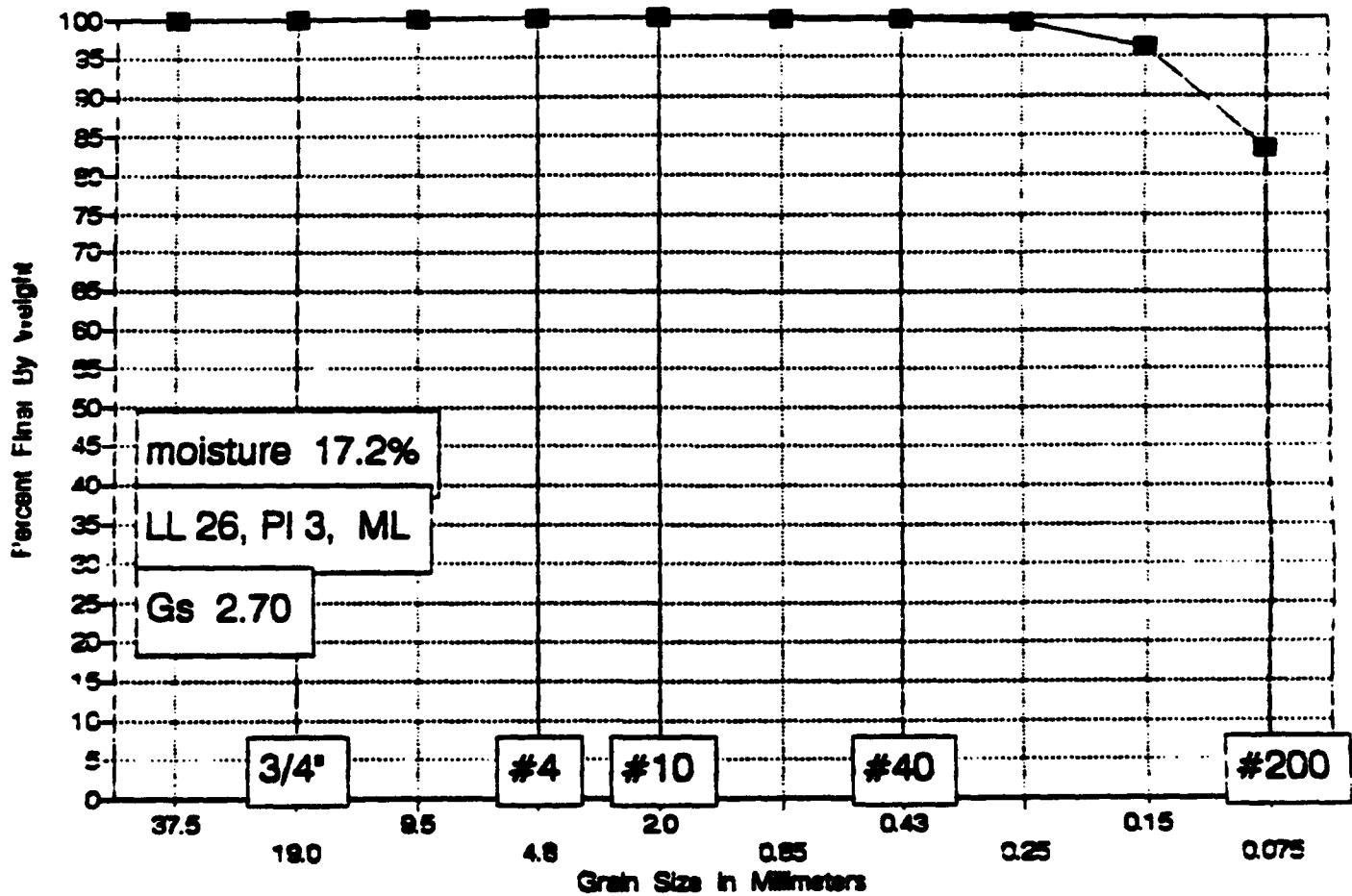


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		<u>27</u>	<u>22</u>	<u>5</u>	<u>CL-ML</u>

# GRADATION CURVE

Site SB-01-005, Sample at 25 feet



James M. Montgomery  
P.O. 2942-0130

Site ID SB-01-005

Depth 25 feet

Wt soil and dish	304.9
Dry soil & dish	276.1
Dish	108.3

Moisture Content = 17.2

#### SIEVE ANALYSIS

Dry weight of total sample= 167.8

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.1	99.94%	99.9	2.0
# 20	0.34	99.80%	99.8	0.85
# 40	0.59	99.65%	99.6	0.43
# 60	0.99	99.41%	99.4	0.25
# 100	6.49	96.13%	96.1	0.15
# 200	28.03	83.30%	83.3	0.075



# MECHANICAL ANALYSIS

SA

DATE 6/20/77

BY LIF

JOB NUMBER -6051

OWNER/CLIENT UNITED STATES ARMY

LOCATION \_\_\_\_\_

BORING GP-01

SAMPLE 005

DEPTH 25'

NUMBER OF RINGS	<u>127</u>	DISH	<u>315</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>304.9</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>276.1</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>108.3</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>17.2</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		<u>0</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>0.10</u>			
		#20		<u>0.34</u>			
		#40		<u>0.53</u>			
		#60		<u>0.99</u>			
		#100		<u>6.49</u>			
		#200		<u>28.03</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING

SAMPLE

DEPTH

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

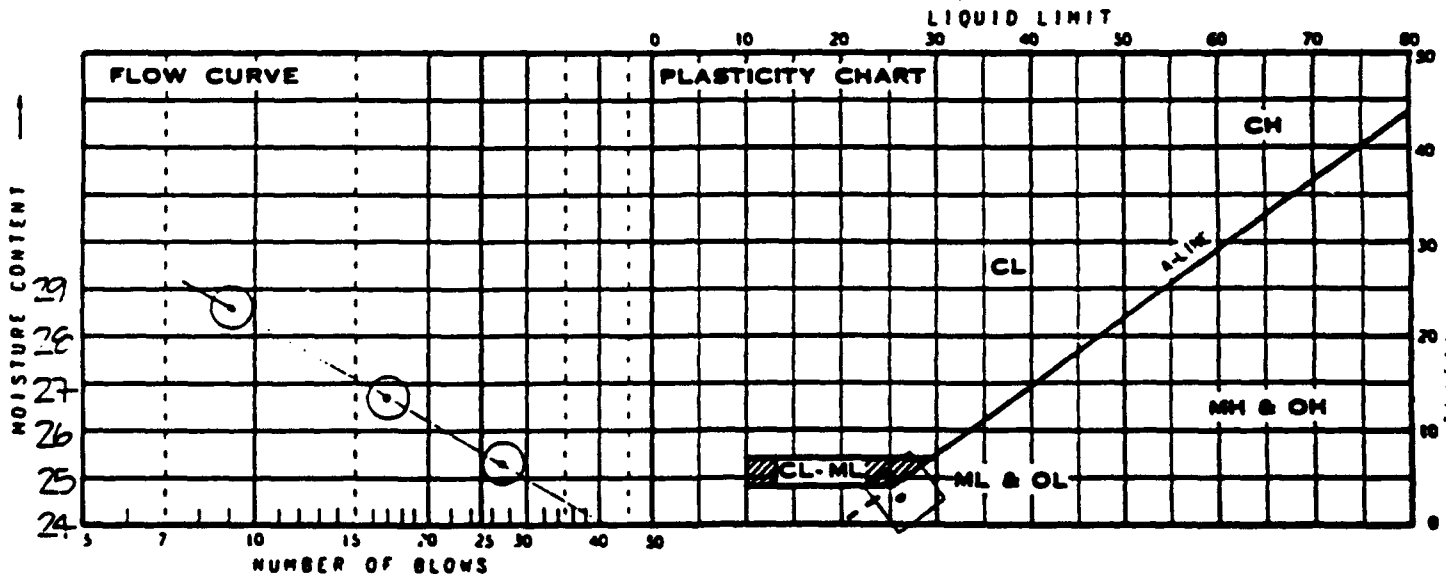
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY

DETERMINATION	1	2	3	4	5	6
DISH	AL121	AL122				
WT OF DISH + WET SOIL	16.74	17.22				
WT OF DISH + DRY SOIL	13.97	15.00				
WT OF MOISTURE						
WT OF DISH						
WT OF DRY SOIL						
MOISTURE CONTENT	23.02	23.12	X=23			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL122	AL123	AL124			
NUMBER OF BLOWS	27	17	9			
WT OF DISH + WET SOIL	10.97	11.73	12.13			
WT OF DISH + DRY SOIL	9.04	9.55	9.74			
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT	25.26	26.75	28.60			

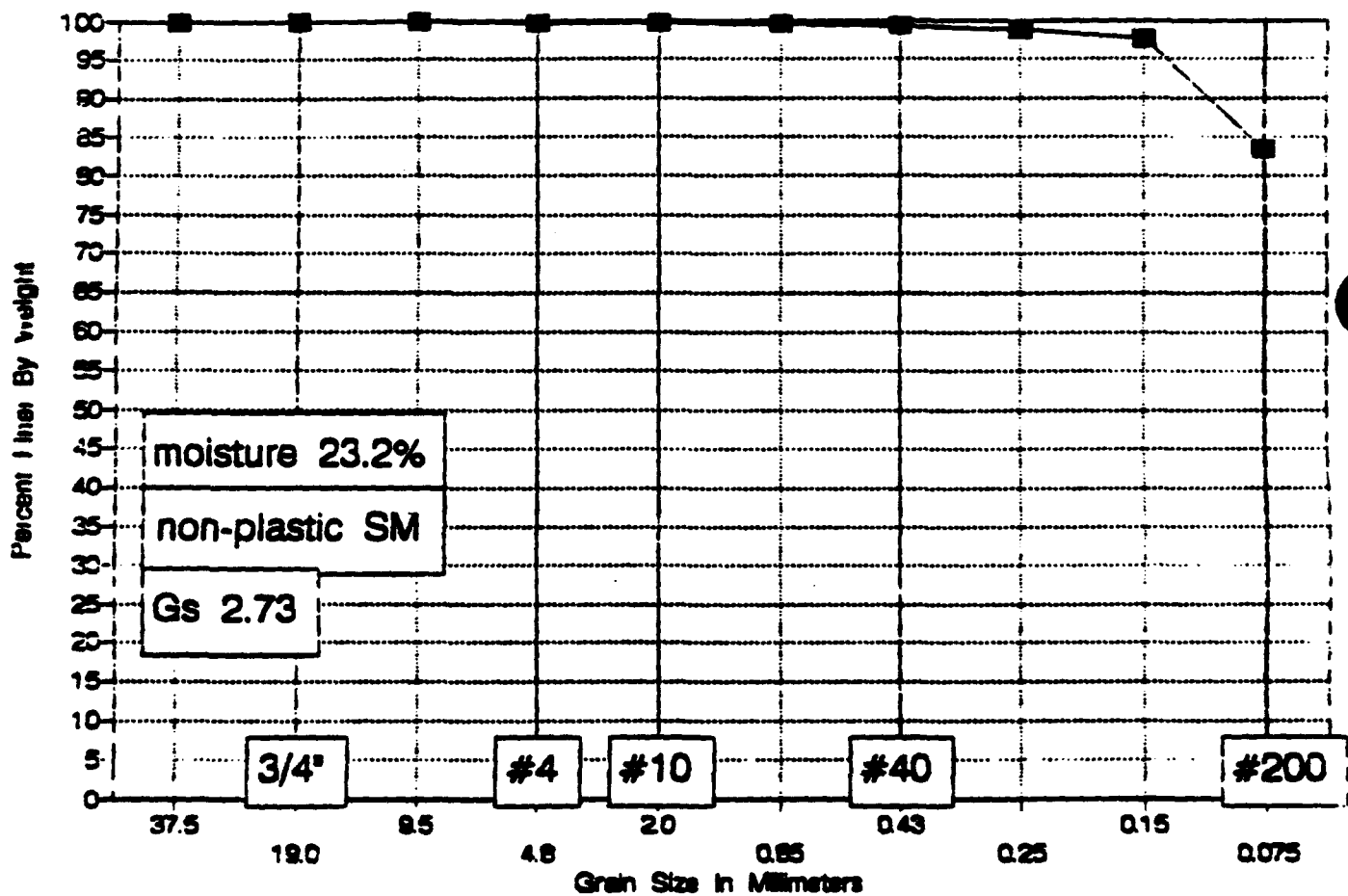


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		26	23	3	ML

# GRADATION CURVE

Site SB-01-006, Sample at 45 feet



James M. Montgomery  
P.O. 2942-0130

Site ID SB-01-006

Depth 45 feet

Moisture Content = 23.2

Wt soil and dish	743.5
Dry soil & dish	624.3
Dish	111

### SIEVE ANALYSIS

Dry weight of total sample= 513.3

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	1.3	99.75%	99.7	4.8
# 10	1.6	99.69%	99.7	2.0
# 20	2.2	99.57%	99.6	0.85
# 40	3.8	99.26%	99.3	0.43
# 60	5.9	98.85%	98.9	0.25
# 100	11.7	97.72%	97.7	0.15
# 200	85.2	83.40%	83.4	0.075

# MECHANICAL ANALYSIS

3A

DATE 6/20/07 BY LAF  
 JOB NUMBER -6051 OWNER/CLIENT JOHNSON COMPANY  
 LOCATION \_\_\_\_\_  
 BORING SB-01 SAMPLE 006 DEPTH 45'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>312</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>743.5</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>624.3</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>111.0</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>23.2</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		1.3		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		1.6			
		#20		2.2			
		#40		3.8			
		#60		5.9			
		#100		11.7			
		#200		85.2			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD LOCATION \_\_\_\_\_  
LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. 6051  
CLIENT/OWNER Jim Montzomery  
LOCATION \_\_\_\_\_  
BORING CB-01 SAMPLE 006 DEPTH 45'

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

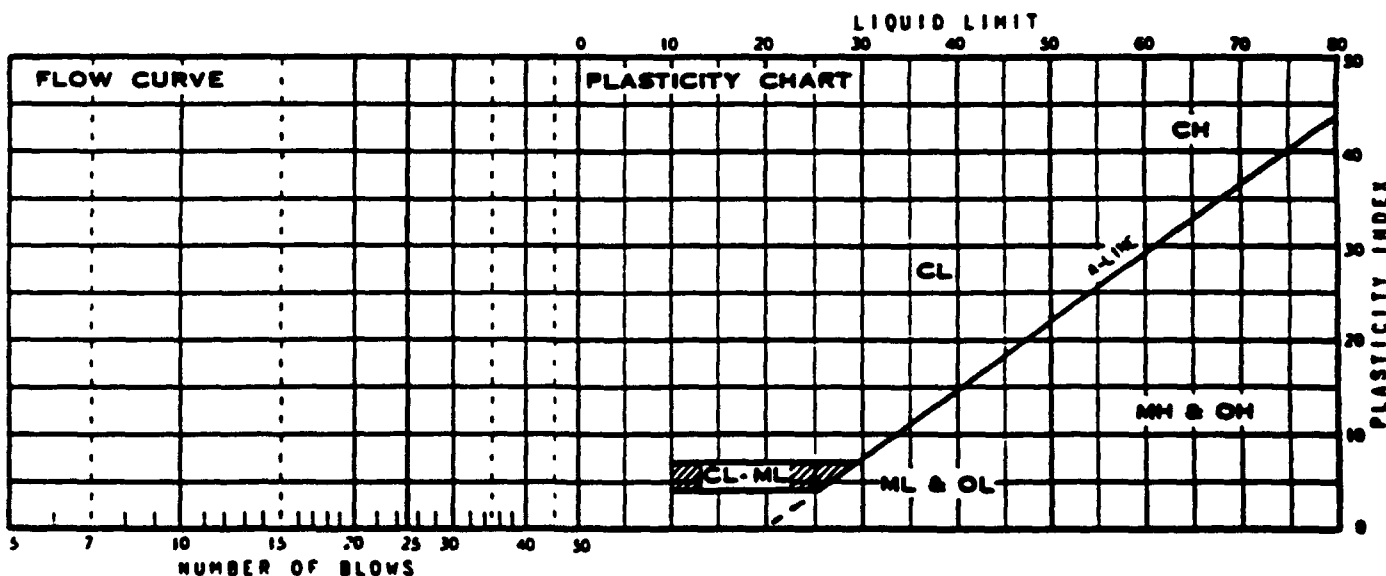
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE.82692

DETERMINATION	1	2	3	4	5	6
DISH	<u>15</u>	<u>61</u>	<u>difficult to thread (silty)</u>			
WT OF DISH + WET SOIL	<u>14.80</u>	<u>15.87</u>				
WT OF DISH + DRY SOIL	<u>12.32</u>	<u>13.11</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT	<u>22.71</u>	<u>23.57</u>	<u><math>\bar{x} = 23</math></u>			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL105</u>	<u>AL116</u>	<u>AL90</u>	<u>COULD NOT GET adequate blow count (25)</u>		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						

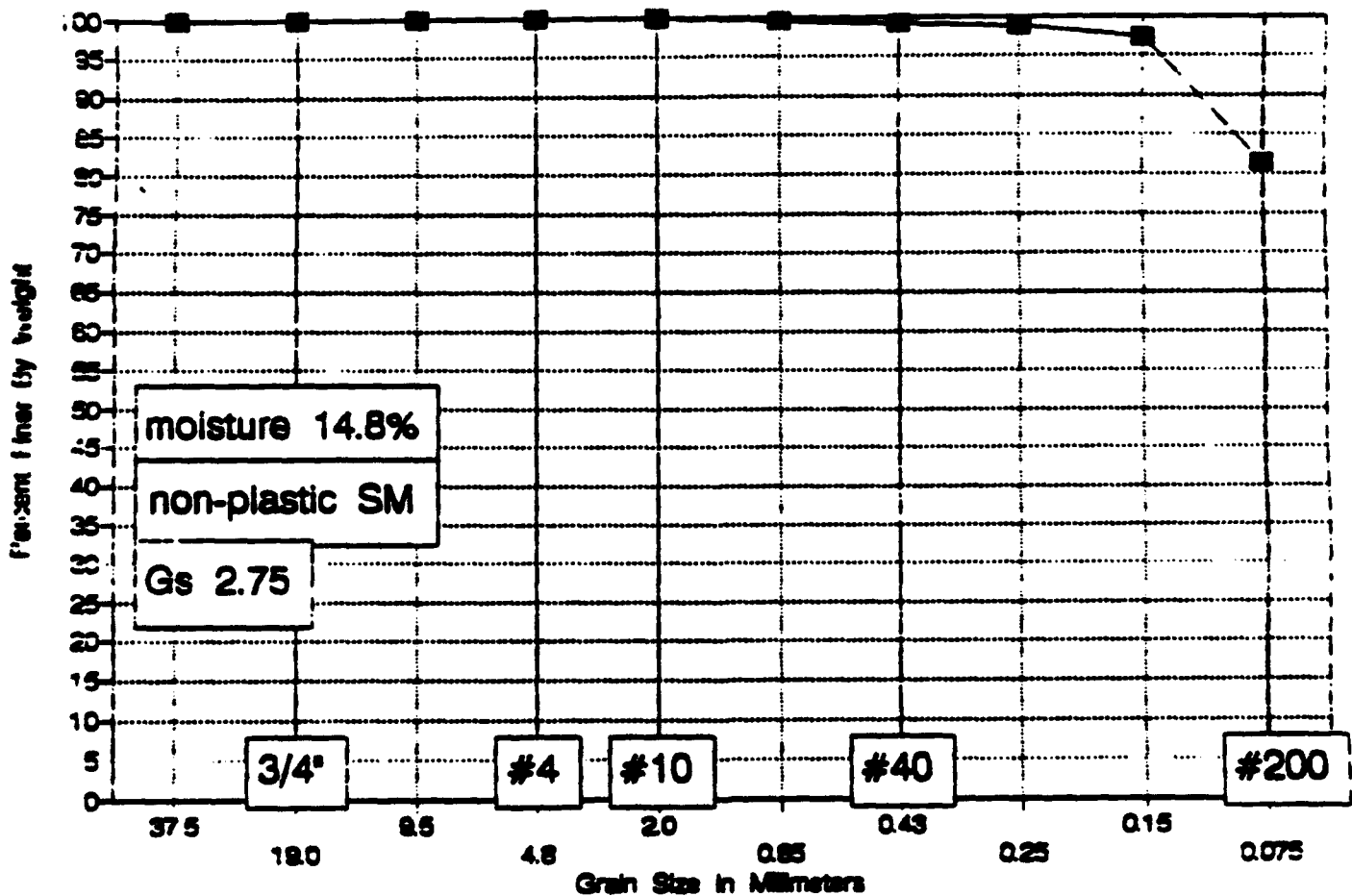


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
			<u>23</u>		<u>NP</u>

# GRADATION CURVE

Site SB-01-007, Sample at 25 feet



James M. Montgomery  
P.O. 2942-0130

Site ID SB-01-007

Depth 25 feet

Moisture Content = 14.8

Wt soil and dish	409.7
Dry soil & dish	371
Dish	109.1

### SIEVE ANALYSIS

Dry weight of total sample= 261.9

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.4	99.85%	99.8	2.0
# 20	1.4	99.47%	99.5	0.85
# 40	2.4	99.08%	99.1	0.43
# 60	3.2	98.78%	98.8	0.25
# 100	7	97.33%	97.3	0.15
# 200	48.8	81.37%	81.4	0.075



# MECHANICAL ANALYSIS

DATE 6/20/92 BY LCF  
 JOB NUMBER 1-1024 OWNER/CLIENT Illinois Department of Transportation  
 LOCATION \_\_\_\_\_  
 BORING SP-01 SAMPLE OUT DEPTH 25'

NUMBER OF RINGS	<u>1237</u>	DISH	<u>316</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>409.7</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>371.0</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>[09.]</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>14.8</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		<u>0</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>.4</u>			
		#20		<u>1.4</u>			
		#40		<u>2.4</u>			
		#60		<u>3.2</u>			
		#100		<u>7.0</u>			
		#200		<u>48.8</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING

SAMPLE

DEPTH

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

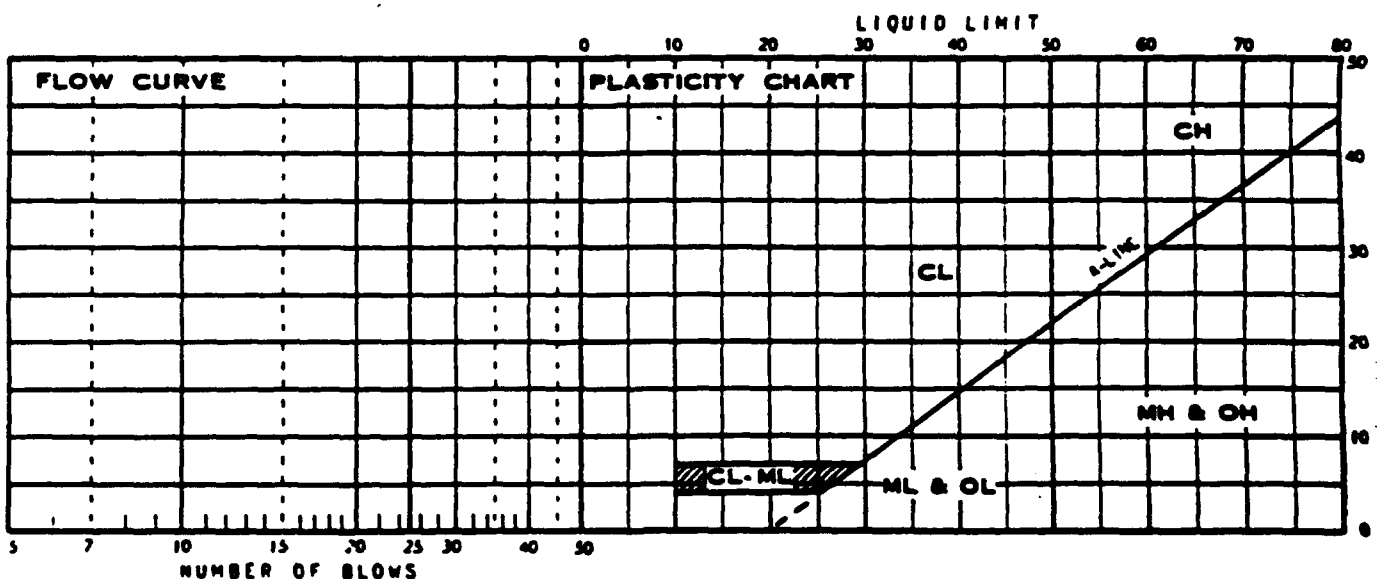
PLASTIC LIMIT BY GE. 82097

DETERMINATION	1	2	3	4	5	6
DISH	AL-12	AL-117	AL-117			
WT OF DISH + WET SOIL	13.38	13.38				
WT OF DISH + DRY SOIL	11.10	14.79				
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT	23.51	23.82	$\bar{x}=24$			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL-122	AL-113	AL-119	could not get accurate blow count		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT						

MOISTURE CONTENT

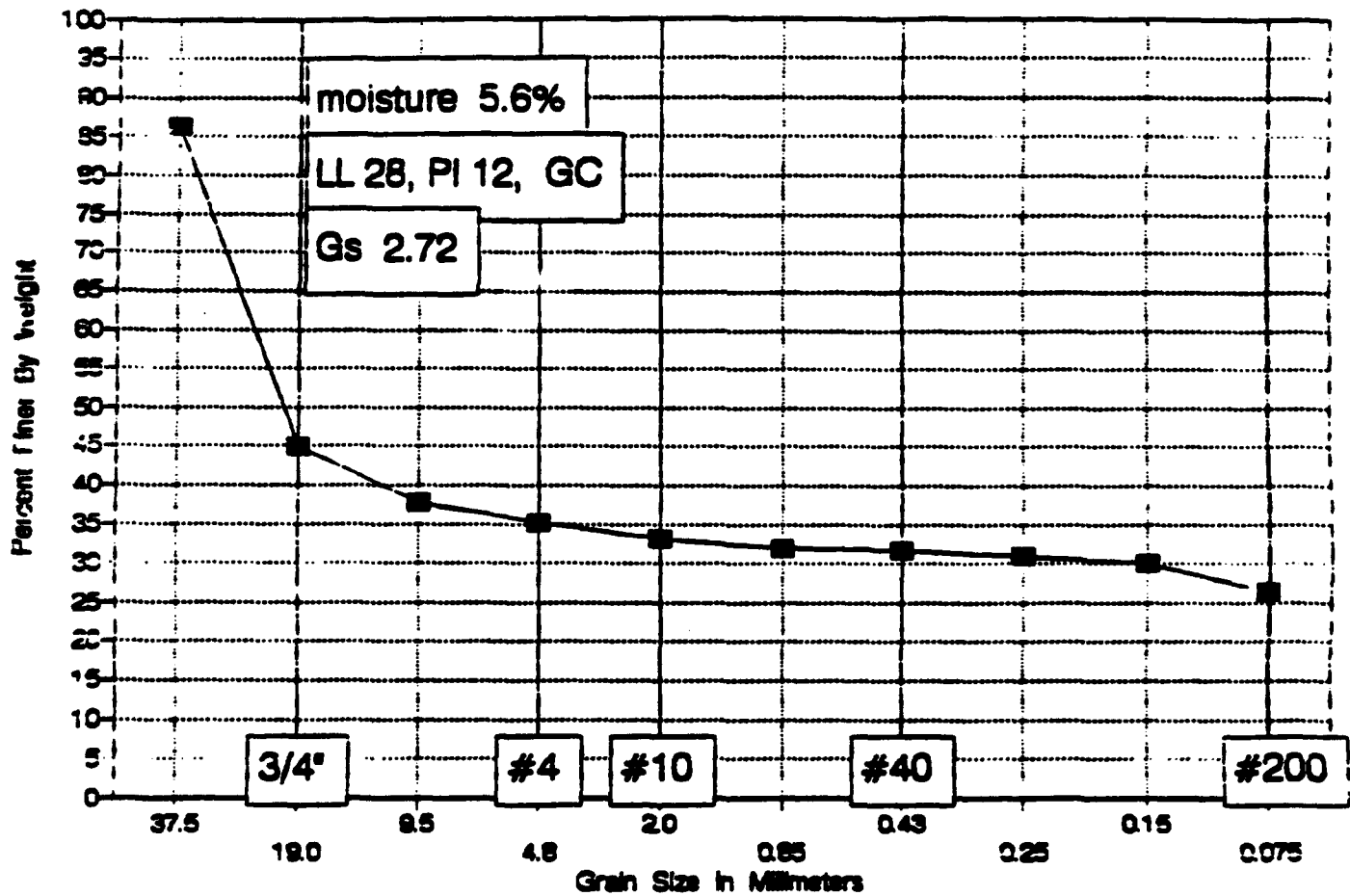


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
			24		NP

# GRADATION CURVE

Site SB-01-008, Sample at 100 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	SB-01-008	Wt soil and dish	950.4
		Dry soil & dish	909
Depth	100 feet	Dish	167.9
Moisture Content =	5.6		

#### SIEVE ANALYSIS

Dry weight of total sample= 741.1

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	101.57	86.29%	86.3	37.5
3/4 inch	408.1	44.93%	44.9	19.0
3/8 inch	460.81	37.82%	37.8	9.5
# 4	479.82	35.26%	35.3	4.8
# 10	495.72	33.11%	33.1	2.0
# 20	503.37	32.08%	32.1	0.85
# 40	507.42	31.53%	31.5	0.43
# 60	511.69	30.96%	31.0	0.25
# 100	519	29.97%	30.0	0.15
# 200	545.53	26.39%	26.4	0.075

# MECHANICAL ANALYSIS

SA

DATE 8/20/92 BY LAF  
 JOB NUMBER 505 OWNER/CLIENT Jim Moniganery  
 LOCATION \_\_\_\_\_  
 BORING SB-01 SAMPLE 005 DEPTH 100'

NUMBER OF RINGS	<u>127g</u>	DISH	<u>47</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>950.4</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>909.0</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>167.9</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>5.6</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"		0		
		1-1/2"		101.57		
		3/4"		408.10		
		3/8"		460.81		
		#4		479.82		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCU. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		495.72			
		#20		503.37			
		#40		507.42			
		#60		511.69			
		#100		519.00			
		#200		545.53			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

ENGINEER

LOCATION

BORING 35-21 SAMPLE 206 DEPTH 100

## FIELD DENSITY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

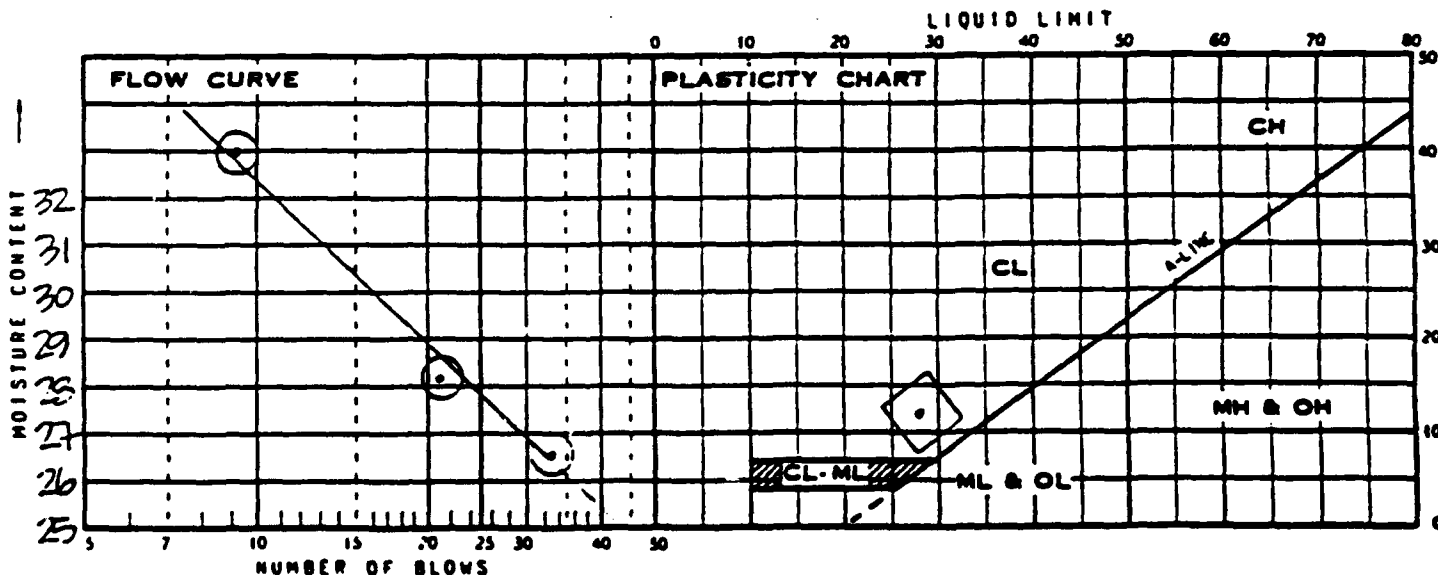
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

## PLASTIC LIMIT BY ME 52492

DETERMINATION	1	2	3	4	5	6
DISH	A-116	A-130				
WT OF DISH + WET SOIL	13.82	14.54				
WT OF DISH + DRY SOIL	12.07	12.70				
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT	16.40	16.28	$\bar{x} = 16$			

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	A-123	A-7	A-83			
NUMBER OF BLOWS	33	21	9			
WT OF DISH + WET SOIL	12.87	12.70	13.83			
WT OF DISH + DRY SOIL	10.47	10.22	10.82			
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT	26.46	28.12	31.95			



## SUMMARY

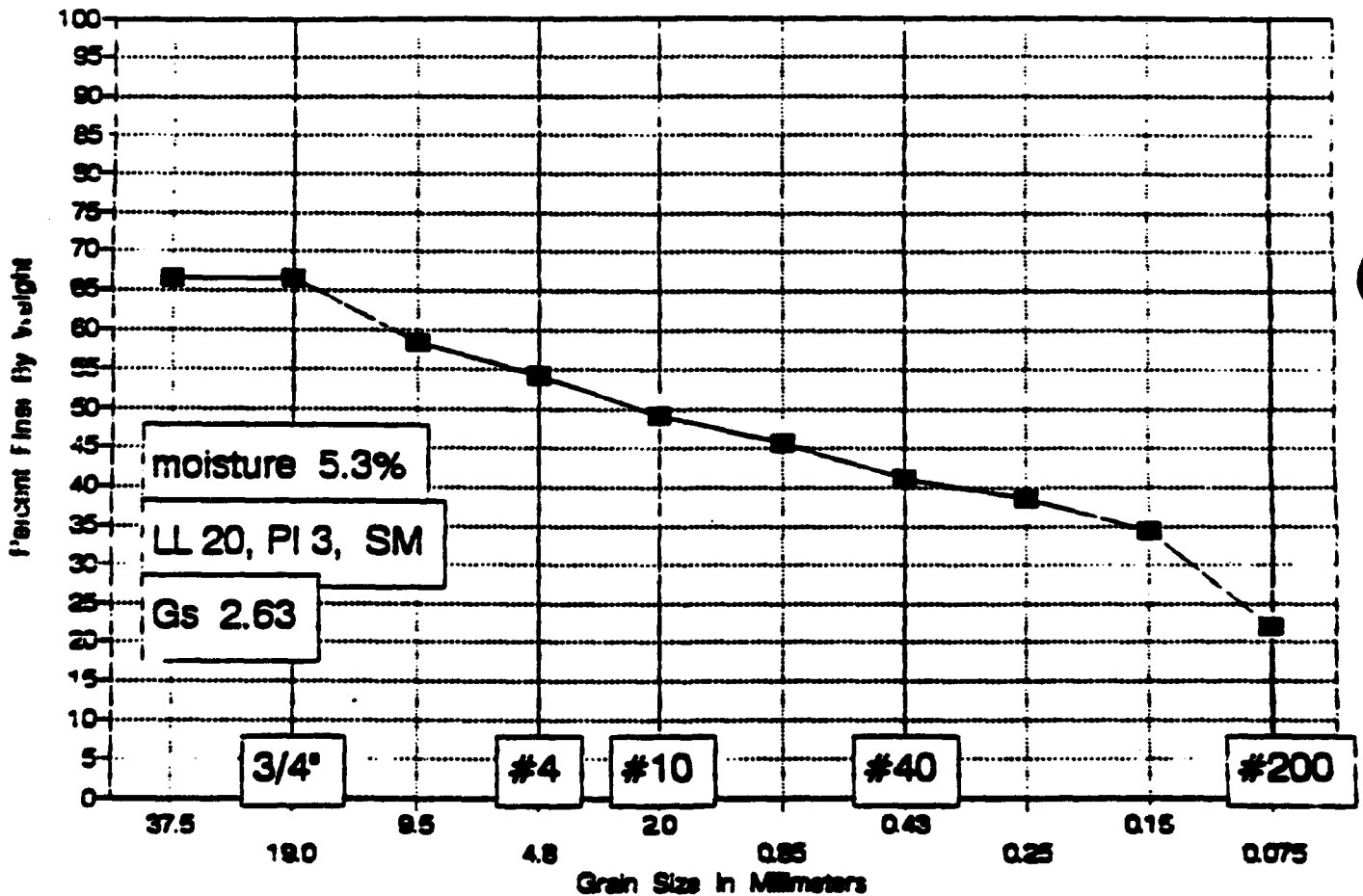
DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		28	16	12	CL

**SHALLOW SOIL BORING SAMPLES**

**SWMUs 26, 29, 42, 46**

# GRADATION CURVE

Site SB-26-005, Sample at 0 to 3 feet





James M. Montgomery  
P.O. 2942-0130

Site ID	SB-26-005	Wt soil and dish	301.9
		Dry soil & dish	292
Depth	0-3	Dish	106.2
Moisture Content =	5.3		

#### SIEVE ANALYSIS

Dry weight of total sample= 185.8

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	62.1	66.58%	66.6	37.5
3/4 inch	62.1	66.58%	66.6	19.0
3/8 inch	77.5	58.29%	58.3	9.5
# 4	85.2	54.14%	54.1	4.8
# 10	94.3	49.25%	49.2	2.0
# 20	101.2	45.53%	45.5	0.85
# 40	109.5	41.07%	41.1	0.43
# 60	114.2	38.54%	38.5	0.25
# 100	122	34.34%	34.3	0.15
# 200	145	21.96%	22.0	0.075

# MECHANICAL ANALYSIS

SA

DATE 9/14/92 BY LAF  
 JOB NUMBER -6081 OWNER/CLIENT JM Montgomery  
 LOCATION \_\_\_\_\_  
 BORING CB-26 SAMPLE 005 DEPTH 0-3'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>82</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>301.9</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>292.0</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>106.2</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>53</u>

WASH SEIVE \_\_\_\_\_ DRY SEIVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"		0		
		<del>2 1/2"</del> 1"		62.1		
		3/4"		62.1		
		3/8"		77.5		
		#4		85.2		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		94.3			
		#20		101.2			
		#40		109.5			
		#60		114.3			
		#100		122.0			
		#200		145.0			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO. -6091  
 CLIENT/OWNER JPM MONTGOMERY  
 LOCATION BORING SB-26 SAMPLE 003 DEPTH 0-3'

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE. 9/16/92

*\*small sample - gravel*

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 130</u>	<u>AL 174</u>				
WT OF DISH + WET SOIL	<u>10.99</u>	<u>11.61</u>				
WT OF DISH + DRY SOIL	<u>9.61</u>	<u>10.14</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT	<u>16.81</u>	<u>16.82</u>	<u><math>\bar{x} = 17</math></u>			

LIQUID LIMIT

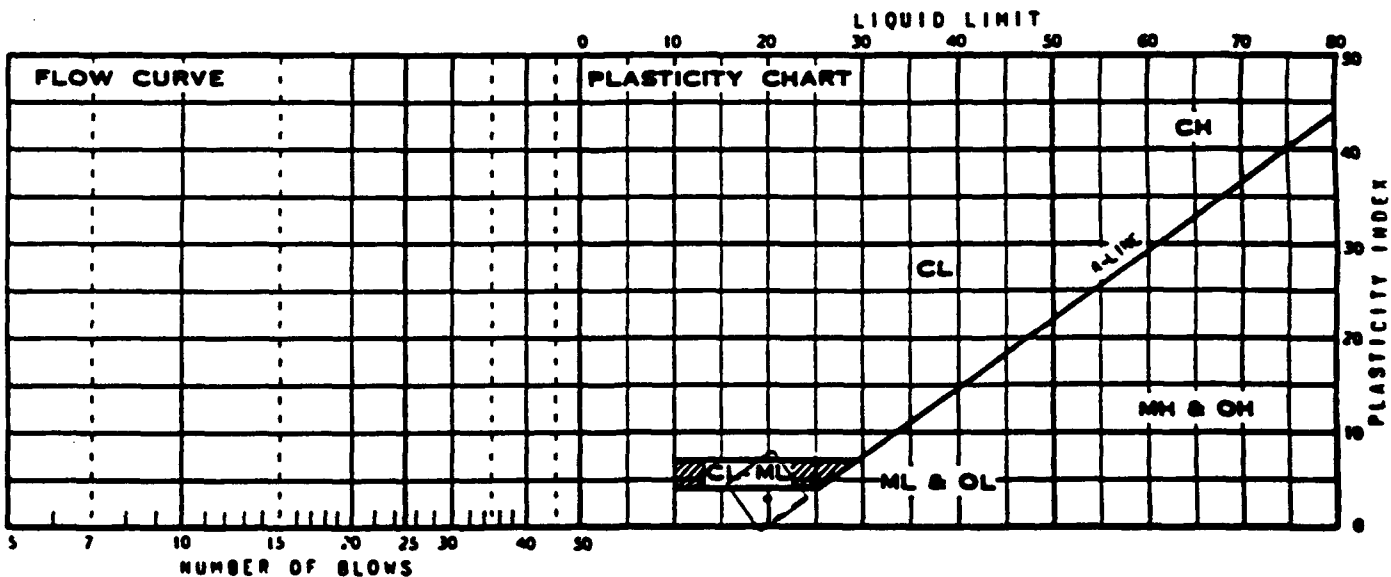
$K = \text{table factor}$   $W_N = \text{moisture content}$

DETERMINATION	1	2	3	4	5	6
DISH	<u>25</u>	<u>AL 114</u>	<u>AL 174</u>	<u>ONLY enough sample to get 1 pt.</u>		
NUMBER OF BLOWS	<u>25</u>					
WT OF DISH + WET SOIL	<u>12.66</u>					
WT OF DISH + DRY SOIL	<u>10.79</u>					
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT	<u>19.91</u>					

$$L_L = K(W_N)$$

$$= (1.00)(19.91)$$

$$L_L = 19.91$$

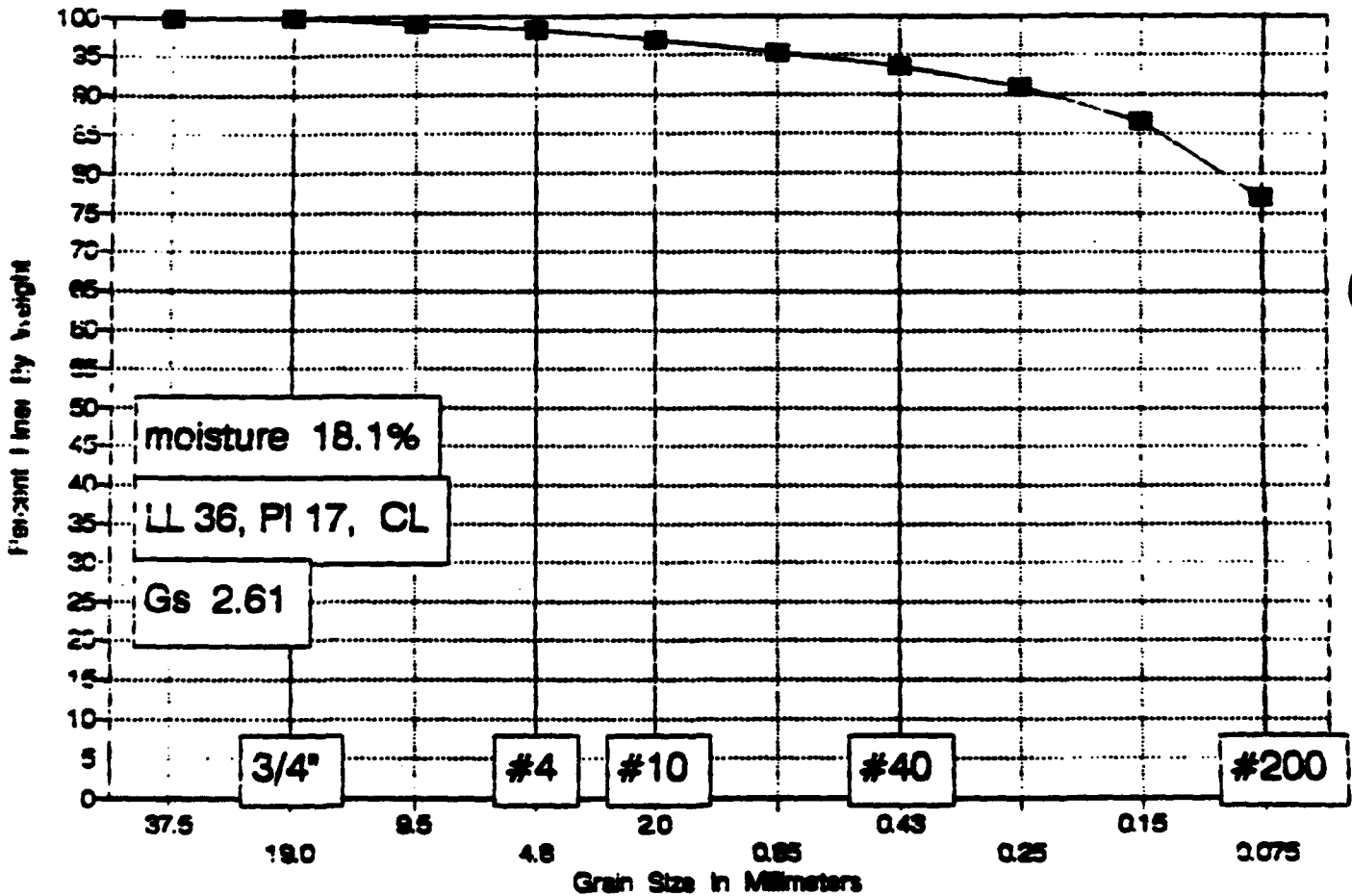


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		<u>20</u>	<u>17</u>	<u>3</u>	<u>ML</u>

# GRADATION CURVE

Site SB-26-009, Sample at 0 to 3 feet



James M. Montgomery  
P.O. 2942-0130

Site ID SB-26-009

Depth 0-3 feet

Moisture Content = 18.1

Wt soil and dish	241.3
Dry soil & dish	220.7
Dish	107.1

### SIEVE ANALYSIS

Dry weight of total sample= 113.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	1.1	99.03%	99.0	9.5
# 4	2	98.24%	98.2	4.8
# 10	3.6	96.83%	96.8	2.0
# 20	5.4	95.25%	95.2	0.85
# 40	7.4	93.49%	93.5	0.43
# 60	10.2	91.02%	91.0	0.25
# 100	15.1	86.71%	86.7	0.15
# 200	26.2	76.94%	76.9	0.075

# MECHANICAL ANALYSIS

54

DATE 9/3/92 BY LAF  
 JOB NUMBER - 6061 OWNER/CLIENT Jm montgomery  
 LOCATION \_\_\_\_\_  
 BORING GB-2b SAMPLE 009 DEPTH 0-3'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>306</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>241.3</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>220.7</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>107.1</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>10.1</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		1.1		
		#4		2.0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		3.6			
		#20		5.4			
		#40		7.4			
		#60		10.2			
		#100		15.1			
		#200		26.2			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. -6581  
CLIENT/OWNER DR. K. G. G. G. G. G.  
LOCATION \_\_\_\_\_  
BORING 30-26 SAMPLE 1003 DEPTH 0-3'

## FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL	_____	_____
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

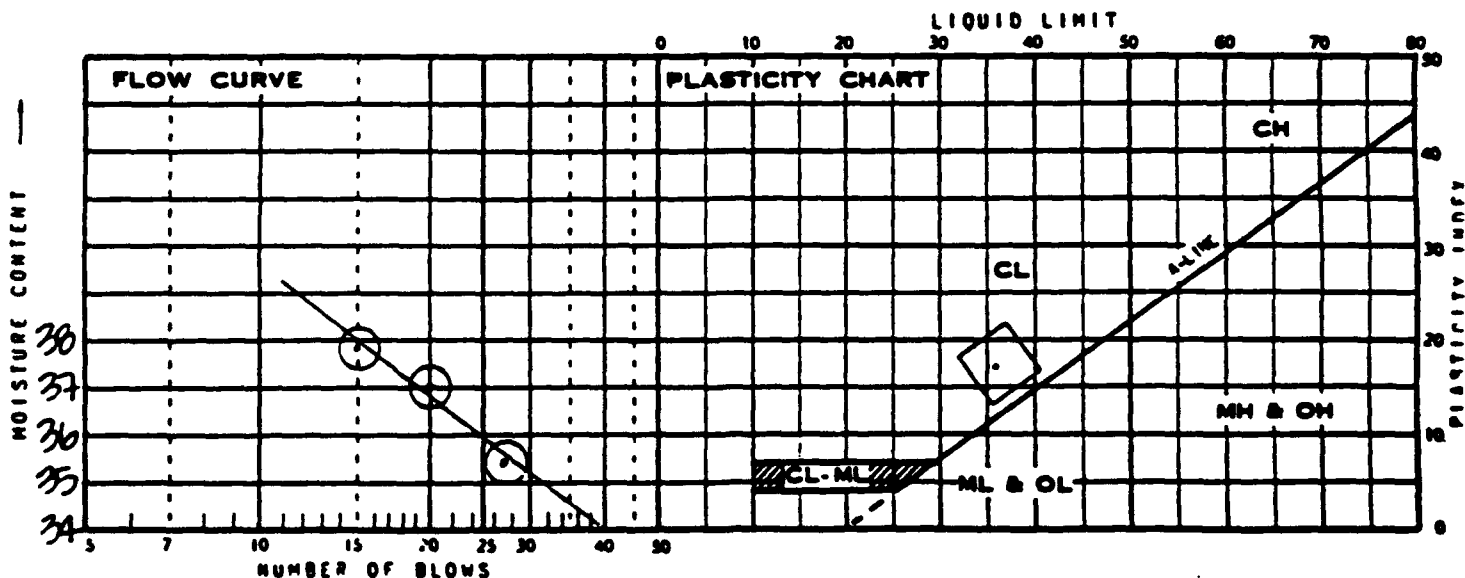
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	_____	_____
WT OF MOISTURE		
WT OF DISH	_____	_____
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

## PLASTIC LIMIT BY LAF. 99.92

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 133</u>	<u>AL 122</u>				
WT OF DISH + WET SOIL	<u>17.03</u>	<u>15.00</u>				
WT OF DISH + DRY SOIL	<u>14.52</u>	<u>12.79</u>	_____	_____	_____	_____
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	_____	_____	_____	_____
WT OF DRY SOIL						
MOISTURE CONTENT	<u>19.13</u>	<u>19.40</u>	<u>19</u>			

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>36</u>	<u>AL 92</u>	<u>AL 131</u>			
NUMBER OF BLOWS	<u>27</u>	<u>20</u>	<u>15</u>			
WT OF DISH + WET SOIL	<u>12.24</u>	<u>11.86</u>	<u>12.92</u>			
WT OF DISH + DRY SOIL	<u>9.41</u>	<u>9.03</u>	<u>9.76</u>	_____	_____	_____
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>	_____	_____	_____
WT OF DRY SOIL						
MOISTURE CONTENT	<u>35.33</u>	<u>37.09</u>	<u>37.80</u>			

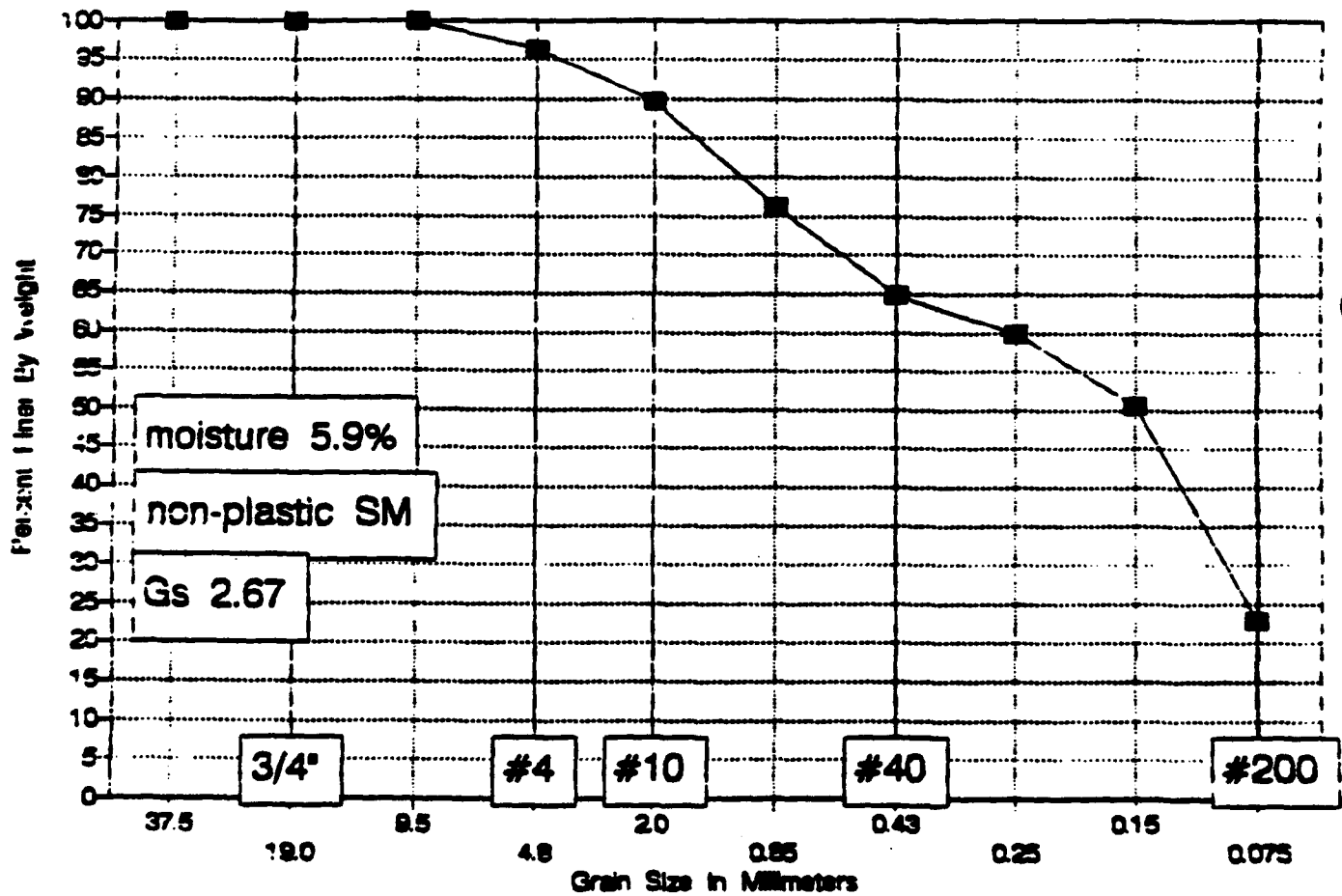


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		<u>36</u>	<u>19</u>	<u>17</u>	<u>CL</u>

# GRADATION CURVE

Site SB-26-013, Sample at 0 to 3 feet





James M. Montgomery  
P.O. 2942-0130

Site ID	SB-26-013	Wt soil and dish	229.7
		Dry soil & dish	223
Depth	0-3 feet	Dish	108.9
Moisture Content =	5.9		

### SIEVE ANALYSIS

Dry weight of total sample= 114.1

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	4.08	96.42%	96.4	4.8
# 10	11.77	89.68%	89.7	2.0
# 20	27.15	76.21%	76.2	0.85
# 40	40.18	64.79%	64.8	0.43
# 60	45.69	59.96%	60.0	0.25
# 100	56.31	50.65%	50.6	0.15
# 200	88.02	22.86%	22.9	0.075

# MECHANICAL ANALYSIS

SA-

DATE 5/20/57 BY L. J. F.  
 JOB NUMBER -6051 OWNER/CLIENT UNITED STATES ARMY  
 LOCATION \_\_\_\_\_  
 BORING GB-26 SAMPLE 012 DEPTH 0-3'

NUMBER OF RINGS	<u>12.7</u>	DISH	<u>201</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>229.7</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>223.0</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>100.9</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>5.9</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		4.00		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		11.77			
		#20		27.15			
		#40		40.18			
		#60		45.69			
		#100		56.31			
		#200		88.02			
		PAN					
		TOTAL					

# ATTENBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO. - 0001

CLIENT/OWNER Jim Montgomery

LOCATION

BORING 2B-26 SAMPLE 013 DEPTH 0-3'

## FIELD DENSITY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

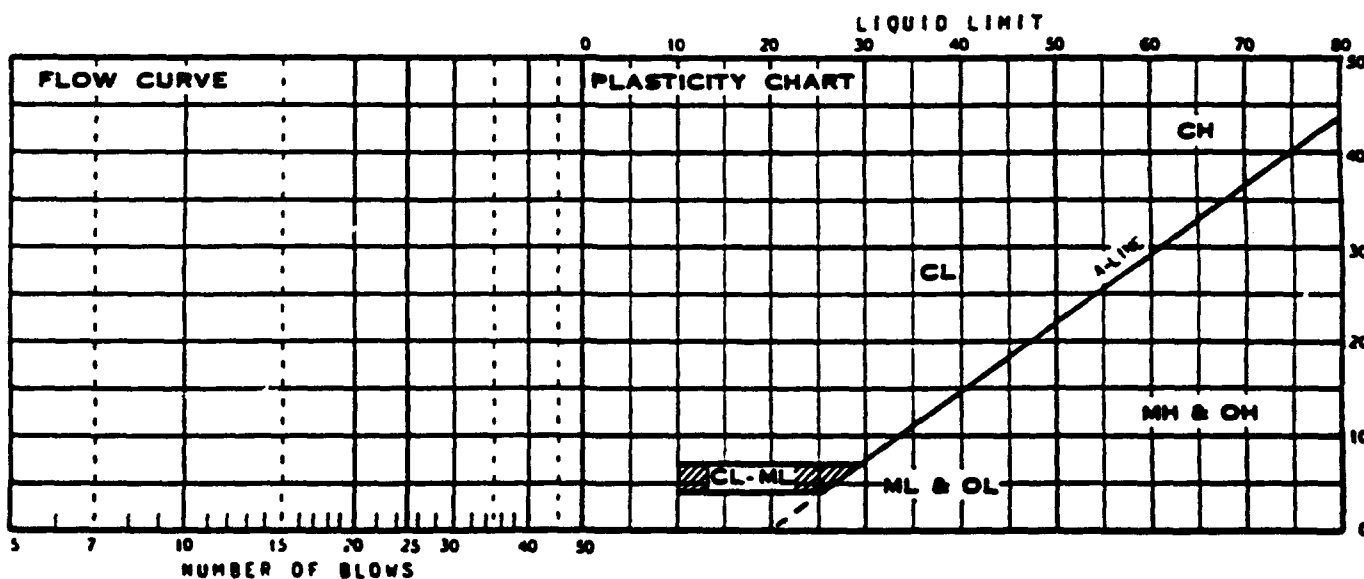
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

## PLASTIC LIMIT BY LAF. 925922

DETERMINATION	1	2	3	4	5	6
DISH	AL 77	AL 76		difficult to thread (sandy)		
WT OF DISH + WET SOIL	14.27	16.14				
WT OF DISH + DRY SOIL	12.35	13.94				
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT	17.53	17.54	$\bar{x} = 18$			

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	11	AL 96	AL 104	could not get adequate blow count (25)		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT						

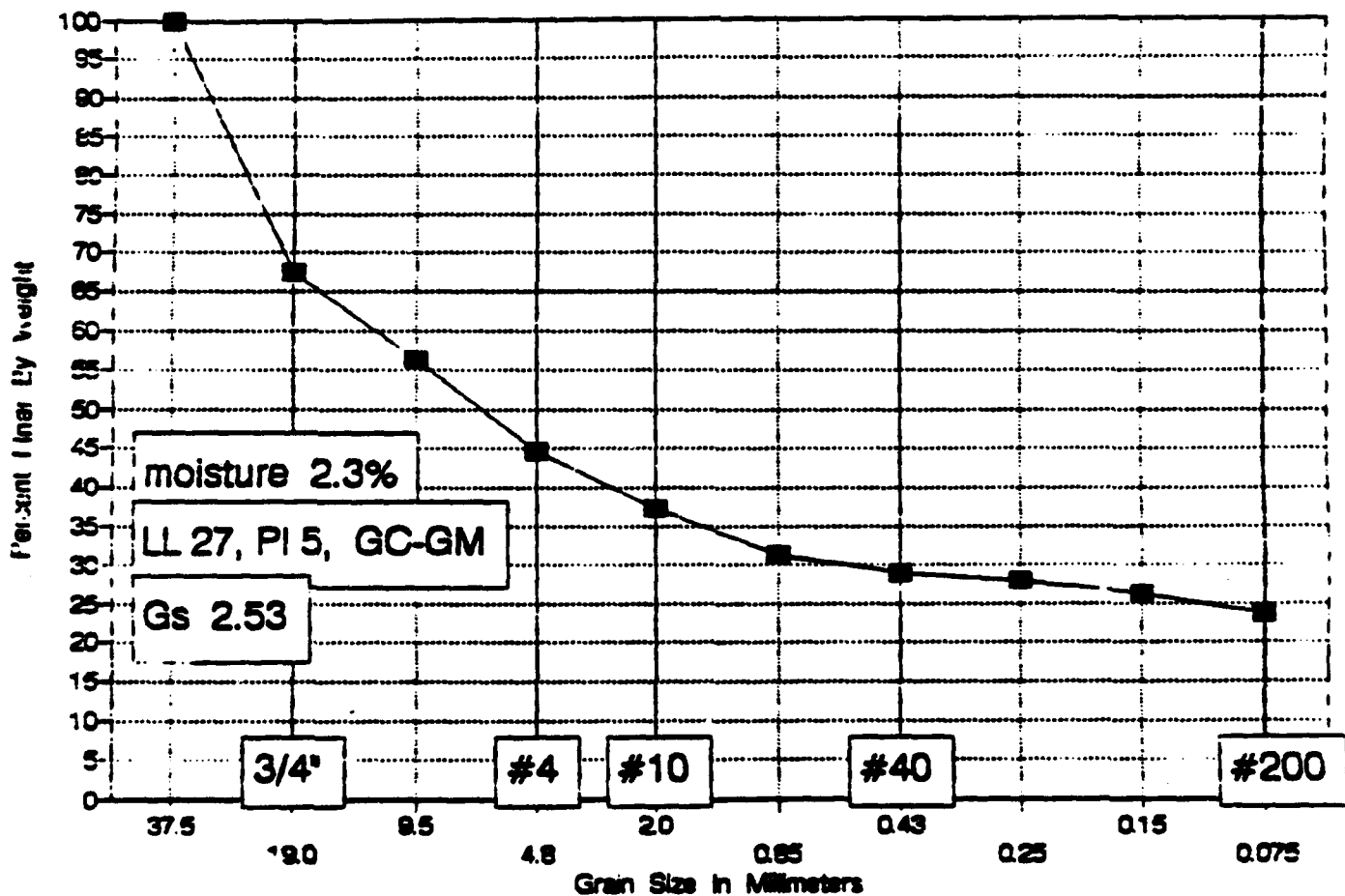


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
			18		NP

# GRADATION CURVE

Site SB-29-002, Sample at 0 to 2.5 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	SB-29-002	Wt soil and dish	282.6
		Dry soil & dish	278.7
Depth	0-2.5 feet	Dish	106.2
Moisture Content =	2.3		

#### SIEVE ANALYSIS

Dry weight of total sample= 172.5

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	56	67.54%	67.5	19.0
3/8 inch	75.6	56.17%	56.2	9.5
# 4	95.3	44.75%	44.8	4.8
# 10	108.4	37.16%	37.2	2.0
# 20	118.5	31.30%	31.3	0.85
# 40	122.6	28.93%	28.9	0.43
# 60	124.5	27.83%	27.8	0.25
# 100	127.3	26.20%	26.2	0.15
# 200	131.8	23.59%	23.6	0.075

# MECHANICAL ANALYSIS

CA

DATE 9/3/92 BY LAE  
 JOB NUMBER -6081 OWNER/CLIENT JM Montgomery  
 LOCATION \_\_\_\_\_  
 BORING CB-029 SAMPLE 002 DEPTH 0-25'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>309</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>282.6</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>278.7</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>106.2</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>2.3</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		<u>56.0</u>		
		3/8"		<u>75.6</u>		
		#4		<u>95.3</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>108.4</u>			
		#20		<u>118.5</u>			
		#40		<u>122.6</u>			
		#60		<u>124.5</u>			
		#100		<u>127.3</u>			
		#200		<u>131.8</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. - 6081  
CLIENT/OWNER JM M. 1217 - 1001  
LOCATION \_\_\_\_\_  
BORING 25-29 SAMPLE 002 DEPTH 0-2.5

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

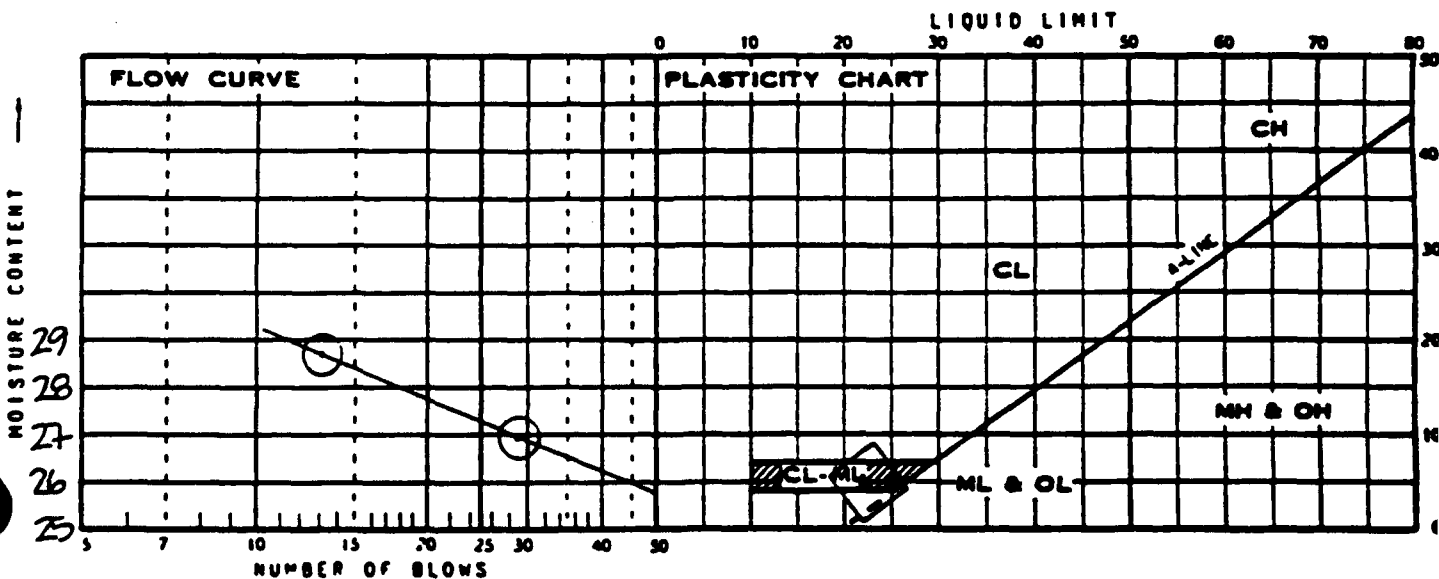
PLASTIC LIMIT BY LAE. 9.8.92

— small sample —

DETERMINATION	1	2	3	4	5	6
DISH	<u>A-6</u>	<u>AL121</u>				
WT OF DISH + WET SOIL	<u>7.32</u>	<u>7.87</u>				
WT OF DISH + DRY SOIL	<u>6.24</u>	<u>6.66</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT	<u>22.31</u>	<u>23.00</u>	<u>X=23</u>			

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL11</u>	<u>AL107</u>	<u>19</u>	<u>ONLY enough sample for 2 pts.</u>		
NUMBER OF BLOWS	<u>20</u>	<u>13</u>				
WT OF DISH + WET SOIL	<u>8.79</u>	<u>9.05</u>				
WT OF DISH + DRY SOIL	<u>7.20</u>	<u>7.34</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT	<u>26.98</u>	<u>28.79</u>				

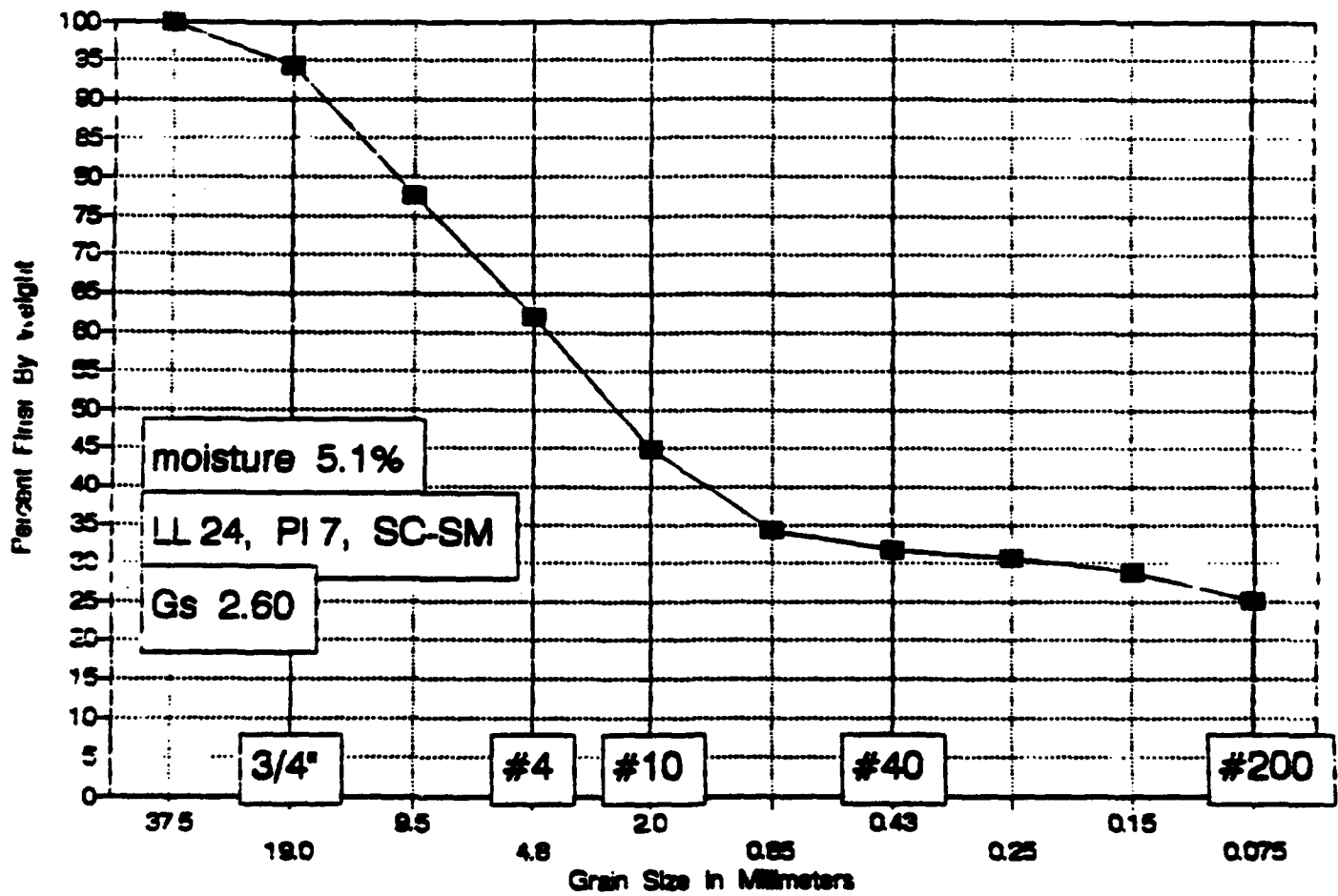


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		<u>27</u>	<u>23</u>	<u>5</u>	<u>CL-ML</u>

# GRADATION CURVE

Site SB-29-005, Sample at 0 to 4.5 feet





James M. Montgomery  
P.O. 2942-0130

Site ID	SB-29-005	Wt soil and dish	258.8
Depth	0-4.5 feet	Dry soil & dish	251.6
Moisture Content =	5.1	Dish	109.7

#### SIEVE ANALYSIS

Dry weight of total sample= 141.9

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	8.1	94.29%	94.3	19.0
3/8 inch	31.7	77.66%	77.7	9.5
# 4	54	61.95%	61.9	4.8
# 10	78.1	44.96%	45.0	2.0
# 20	93.3	34.25%	34.2	0.85
# 40	96.9	31.71%	31.7	0.43
# 60	98.4	30.66%	30.7	0.25
# 100	101	28.82%	28.8	0.15
# 200	106.3	25.09%	25.1	0.075

# MECHANICAL ANALYSIS

54

DATE 9/3/92 BY LAF  
 JOB NUMBER -6081 OWNER/CLIENT Jinmontgomery  
 LOCATION \_\_\_\_\_  
 BORING SB-29 SAMPLE 005 DEPTH 0-45'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>200</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>250.8</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>251.6</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>102.7</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>5.1</u>

WASH SEIVE \_\_\_\_\_ DRY SEIVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		8.1		
		3/8"		31.7		
		#4		54.0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		78.1			
		#20		93.3			
		#40		96.9			
		#60		98.4			
		#100		101.0			
		#200		106.3			
		PAN					
		TOTAL					

# ATTENBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO. -6061  
 CLIENT/OWNER JM MONTGOMERY  
 LOCATION                       
 BORING SE-22 SAMPLE 0.05 DEPTH 0-4.5

FIELD DENSITY BY                     

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

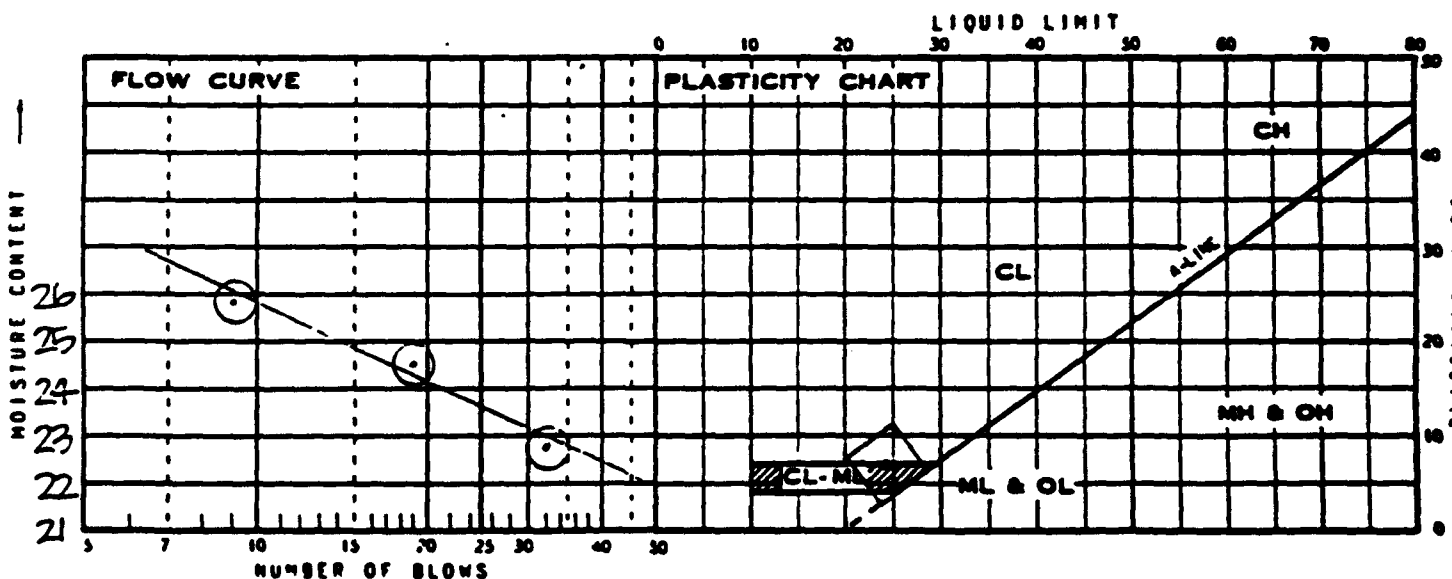
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF. 9.8.92

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 101</u>	<u>AL 111</u>				
WT OF DISH + WET SOIL	<u>17.20</u>	<u>13.71</u>				
WT OF DISH + DRY SOIL	<u>14.85</u>	<u>11.68</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT	<u>17.47</u>	<u>17.46</u>	<u>X=17</u>			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>61</u>	<u>AL 114</u>	<u>19</u>			
NUMBER OF BLOWS	<u>32</u>	<u>19</u>	<u>9</u>			
WT OF DISH + WET SOIL	<u>10.71</u>	<u>12.12</u>	<u>11.92</u>			
WT OF DISH + DRY SOIL	<u>9.98</u>	<u>10.01</u>	<u>9.76</u>			
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT	<u>72.82</u>	<u>24.51</u>	<u>25.84</u>			

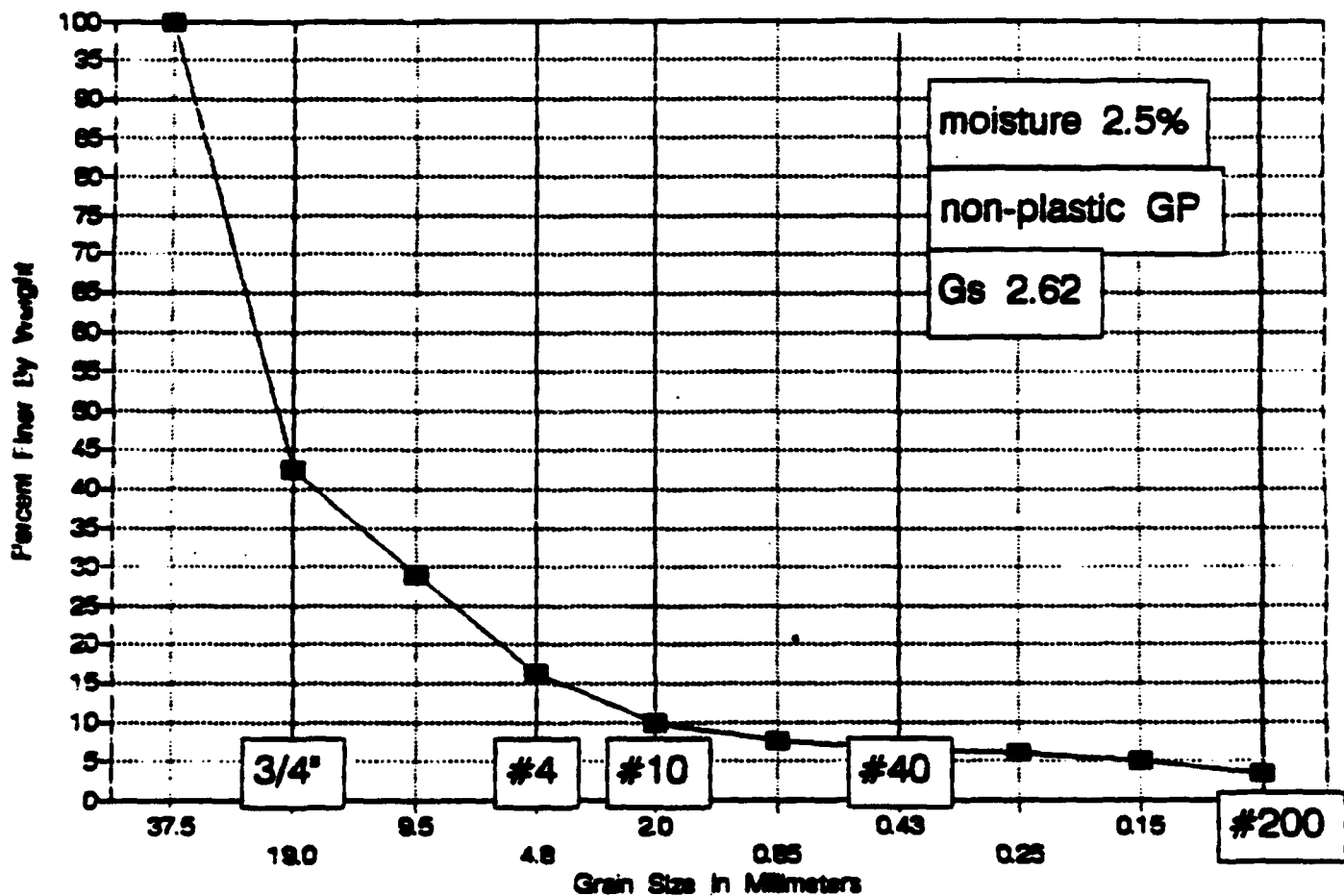


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		<u>74</u>	<u>17</u>	<u>7</u>	<u>CL-ML</u>

# GRADATION CURVE

Site SB-29-013, Sample at 0 to 5 feet



James M. Montgomery  
P.O. 2942-0130

Site ID SB-29-013

Depth 0-5 feet

Moisture Content = 2.5

Wt soil and dish	323.1
Dry soil & dish	318
Dish	111.7

#### SIEVE ANALYSIS

Dry weight of total sample= 206.3

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	118.7	42.46%	42.5	19.0
3/8 inch	146.6	28.94%	28.9	9.5
# 4	172.7	16.29%	16.3	4.8
# 10	185.6	10.03%	10.0	2.0
# 20	190.9	7.46%	7.5	0.85
# 40	192.5	6.69%	6.7	0.43
# 60	193.8	6.06%	6.1	0.25
# 100	196	4.99%	5.0	0.15
# 200	199.6	3.25%	3.2	0.075

# MECHANICAL ANALYSIS

JA

DATE 9/8/92 BY LIF  
 JOB NUMBER -6031 OWNER/CLIENT JM Montecary  
 LOCATION \_\_\_\_\_  
 BORING GB-79 SAMPLE 013 DEPTH 0-5'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>302</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>323.1</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>318</u>
WT. OF WET SOIL		WT. OF MOISTURE	<u>5.1</u>
FIELD DENSITY		WT. OF DISH	<u>111.7</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>2.5</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		<u>118.7</u>		
		3/8"		<u>146.6</u>		
		#4		<u>172.7</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>185.6</u>			
		#20		<u>190.9</u>			
		#40		<u>192.5</u>			
		#60		<u>193.8</u>			
		#100		<u>196.0</u>			
		#200		<u>199.6</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. -0561  
CLIENT/OWNER Jimmortson  
LOCATION \_\_\_\_\_  
BORING SB-29 SAMPLE D13 DEPTH 0-5'

## FIELD DENSITY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

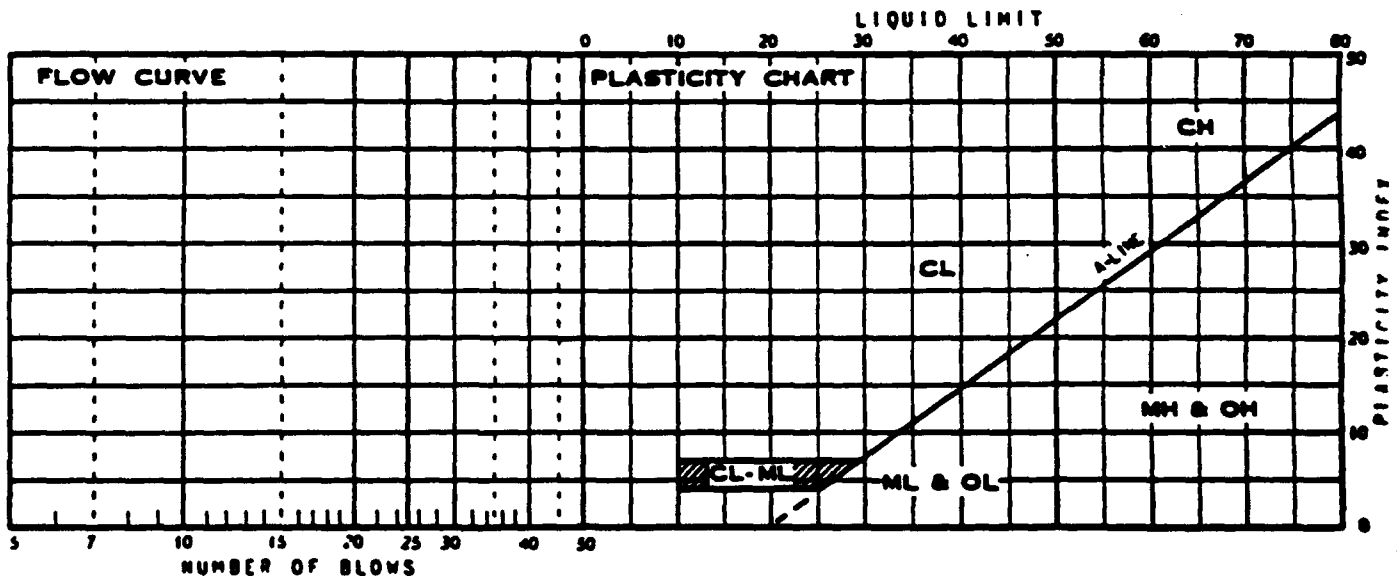
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

## PLASTIC LIMIT BY LOF 9/1/92

DETERMINATION	1	2	3	4	5	6
DISH	<u>103</u>	<u>AL 23</u>	<u>could not thread (sandy)</u>			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT						

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 77</u>	<u>AL 22</u>	<u>651</u>	<u>could not get adequate blow count (25)</u>		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						

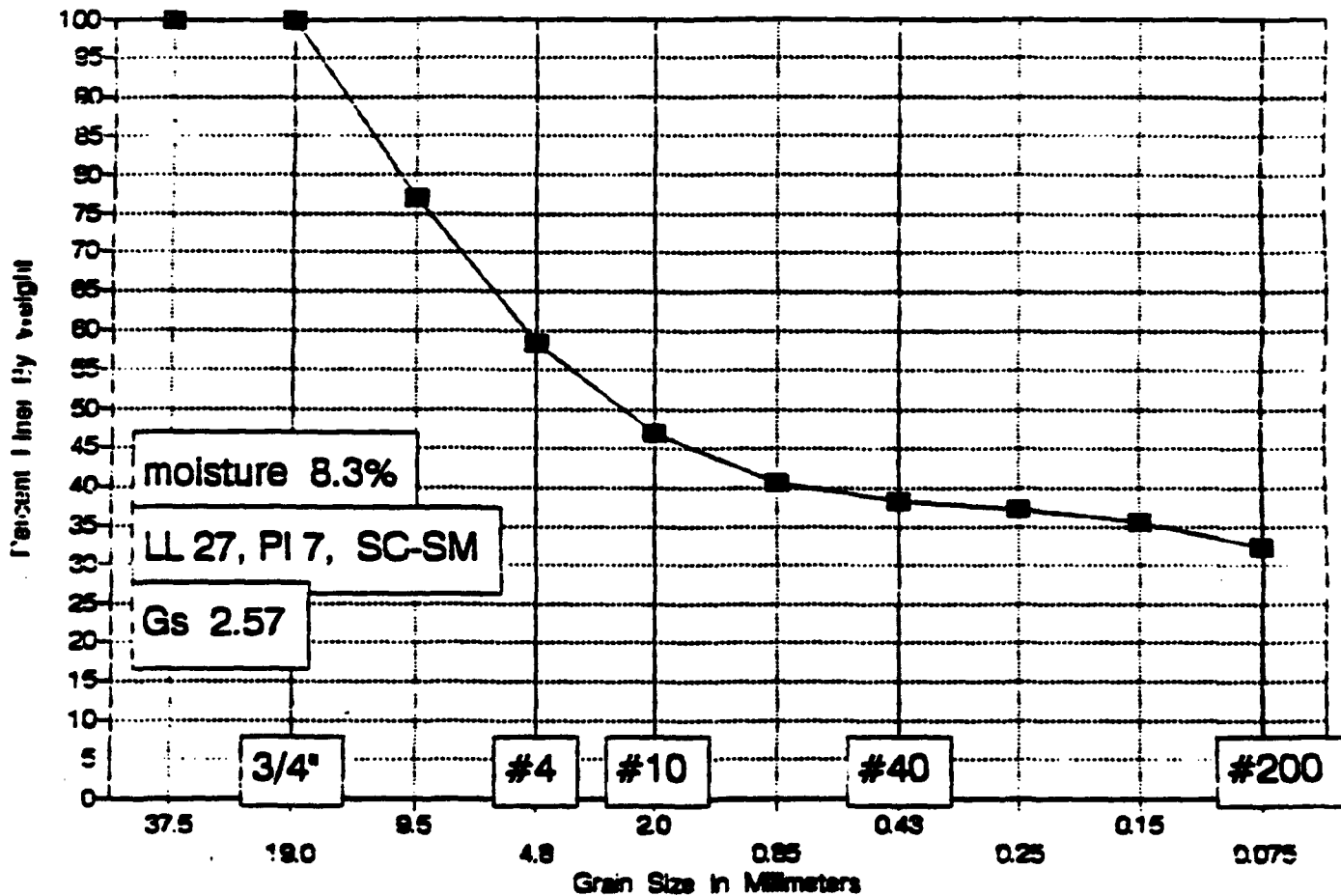


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

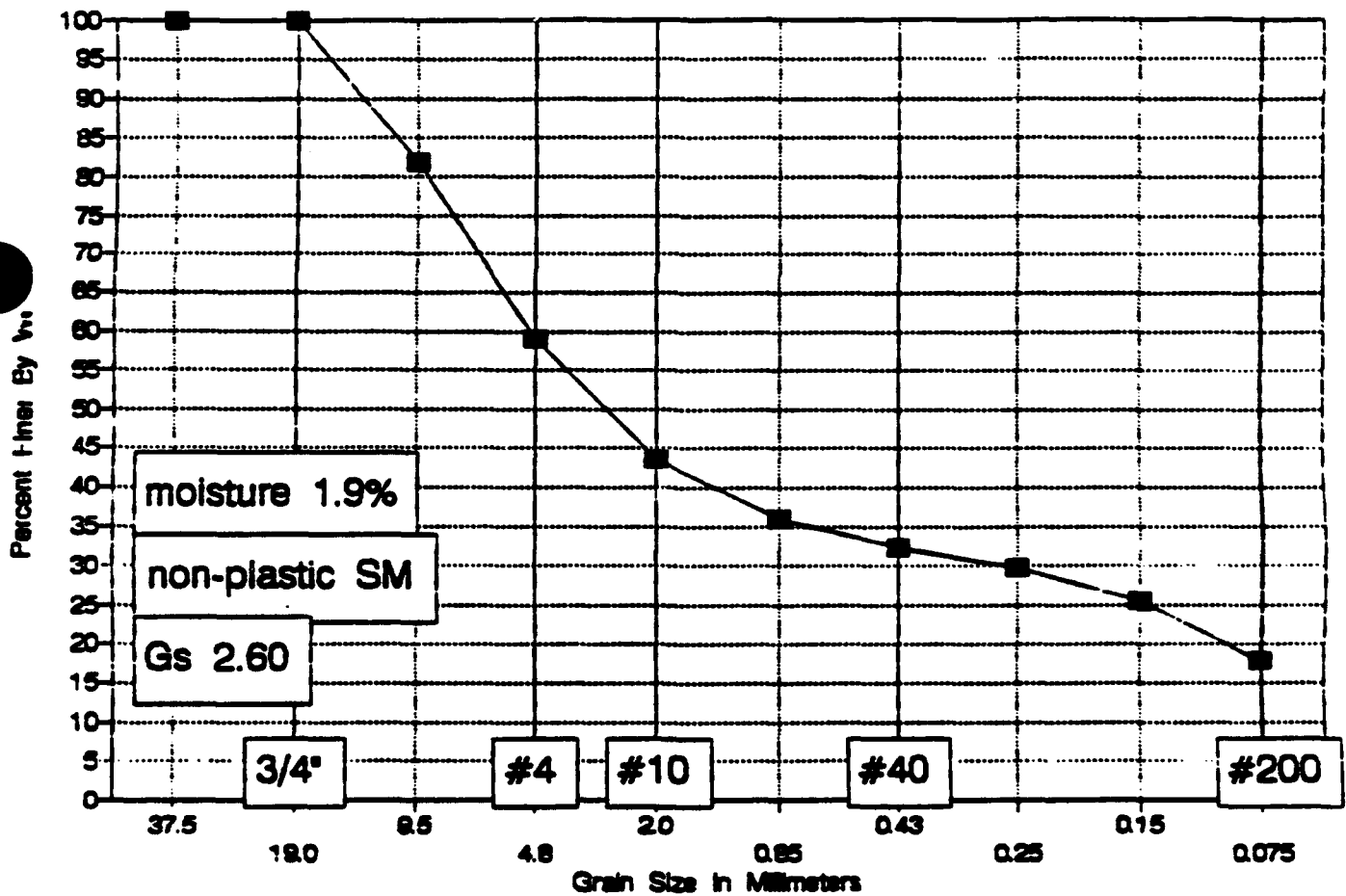
Site SB-29-018, Sample at 0 to 5 feet





**Site SS-28-008, Sample at 0 to 0.2 feet**

**Site SS-28-008, Sample at 0 to 0.2 feet**



# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING C2-27 SAMPLE 007 DEPTH 0-02

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

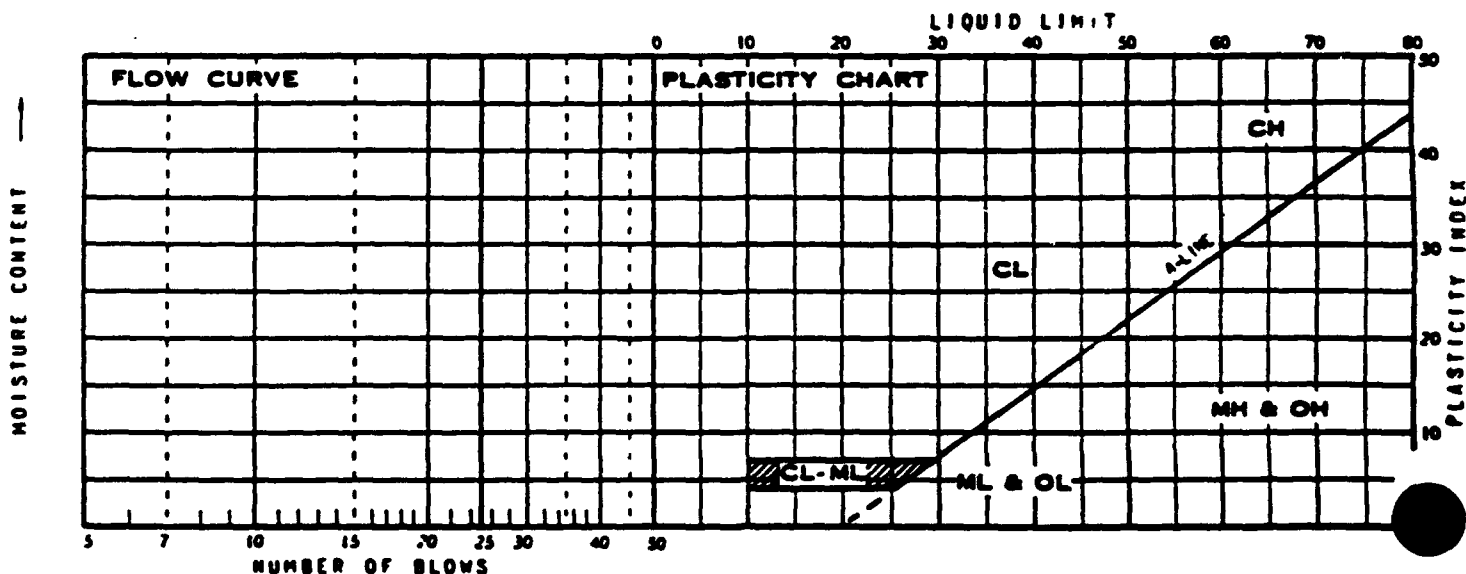
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE.91092

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 92</u>	<u>AL 98</u>	<u>could not thread (gassy)</u>			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 92</u>	<u>AL 104</u>	<u>AL 100</u>	<u>could not get adequate blow count (25)</u>		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						



SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

5A

# MECHANICAL ANALYSIS

DATE 9/2/92 BY LAF  
 JOB NUMBER -6051 OWNER/CLIENT JMM Montgomery  
 LOCATION \_\_\_\_\_  
 BORING SS-27 SAMPLE 007 DEPTH 0-0.2'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>202</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>324.7</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>318.0</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>102.5</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>3.2</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (g)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		54.8		
		#4		91.8		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		110.7			
		#20		122.8			
		#40		132.1			
		#60		138.2			
		#100		149.4			
		#200		175.8			
		PAN					
		TOTAL					

James M. Montgomery  
P.O. 2942-0130

Site ID	SS-27-007	Wt soil and dish	324.7
		Dry soil & dish	318
Depth	0-0.2 feet	Dish	108.5
Moisture Content =	3.2		

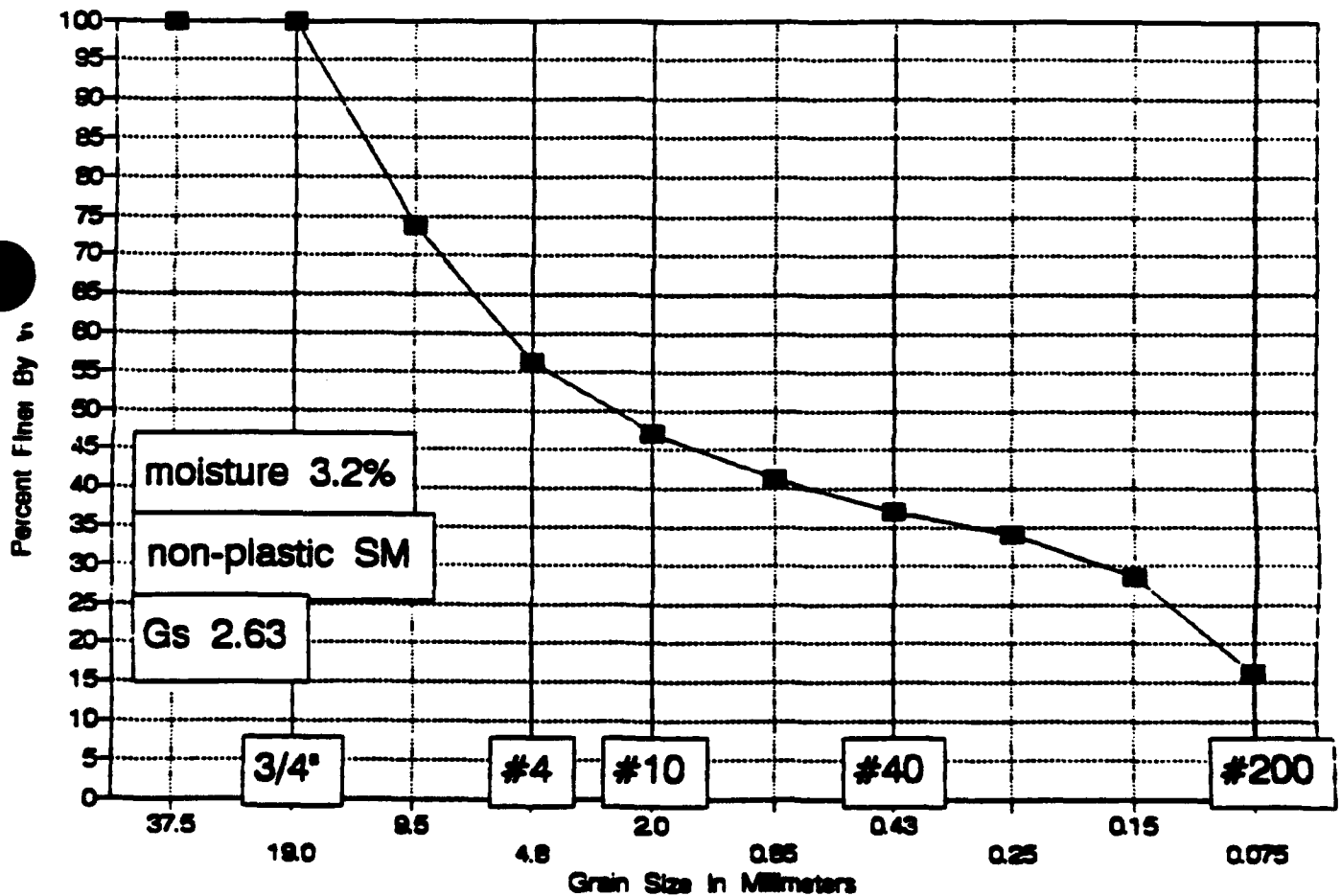
#### SIEVE ANALYSIS

Dry weight of total sample= 209.5

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	54.8	73.84%	73.8	9.5
# 4	91.8	56.18%	56.2	4.8
# 10	110.7	47.16%	47.2	2.0
# 20	122.8	41.38%	41.4	0.85
# 40	132.1	36.95%	36.9	0.43
# 60	138.2	34.03%	34.0	0.25
# 100	149.4	28.69%	28.7	0.15
# 200	175.8	16.09%	16.1	0.075

# GRADATION CURVE

Site SS-27-007, Sample at 0 to 0.2 feet



# ATTENBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_

LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. - 6081  
 CLIENT/OWNER JRM Montzomery  
 LOCATION \_\_\_\_\_  
 BORING CF 26 SAMPLE 032 DEPTH 0-03

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

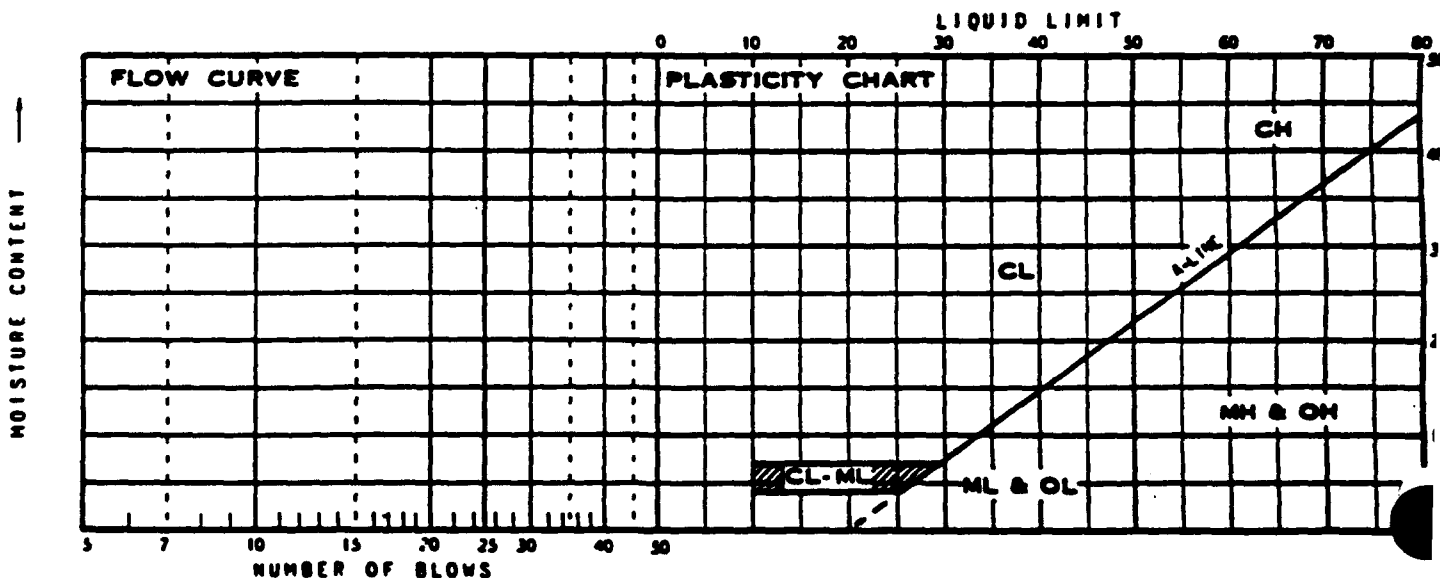
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LF 91092

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 5</u>	<u>AL 114</u>	<u>could not thread</u>			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 106</u>	<u>AL 70</u>	<u>AL 121</u>	<u>could not get adequate blow count</u>		
NUMBER OF BLOWS					<u>(25)</u>	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						



SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

SA

# MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF  
 JOB NUMBER -6081 OWNER/CLIENT JM Montgomery  
 LOCATION \_\_\_\_\_  
 BORING CS-26 SAMPLE 034 DEPTH 0-0.2'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>3/7</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>244.8</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>241.0</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>109.5</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>2.9</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		0		
		3/4"		49.0		
		3/8"		55.4		
		#4		65.2		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		85.0			
		#20		94.5			
		#40		98.1			
		#60		101.7			
		#100		107.8			
		#200		115.8			
		PAN					
		TOTAL					

James M. Montgomery  
P.O. 2942-0130

Site ID SS-26-034  
Depth 0-0.2 feet

Wt soil and dish 244.8  
Dry soil & dish 241  
Dish 109.5

Moisture Content = 2.9

### SIEVE ANALYSIS

Dry weight of total sample= 131.5

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	49	62.74%	62.7	19.0
3/8 inch	55.4	57.87%	57.9	9.5
# 4	65.2	50.42%	50.4	4.8
# 10	85	35.36%	35.4	2.0
# 20	94.5	28.14%	28.1	0.85
# 40	98.1	25.40%	25.4	0.43
# 60	101.7	22.66%	22.7	0.25
# 100	107.8	18.02%	18.0	0.15
# 200	115.8	11.94%	11.9	0.075



# SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER JM Martzosen

TESTED BY LAE DATE 9/25/92

SOIL TYPE \_\_\_\_\_

DETERMINATION NO.	EP-01-079 0-1'	68-42-002 2-4'	<del>68-42-008</del> 0-0.2'	58-29-020 0-5'
FLASK NO.	1	2	3	4
WT. FLASK + WATER + SOIL, W <sub>1</sub>	740.66	731.12	689.72	704.27
TEMPERATURE IN °C, T.	19°	19°	19.5°	19.5°
WT. FLASK + WATER, W <sub>2</sub>	684.69	683.35	641.12	682.48
DISH NO.	64	52	51	101
WT. DISH + DRY SOIL	252.64	303.75	291.65	183.36
WT. DISH	162.77	227.50	217.33	147.74
WT. SOIL, W <sub>s</sub>	89.87	76.25	74.32	35.62
SPECIFIC GRAVITY OF WATER AT T, G <sub>T</sub>	1.0002	1.0002	1.0001	1.0001
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.652	2.678	2.890	2.576

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER Jm montgomery

TESTED BY LAF DATE 9/24/92

SOIL TYPE \_\_\_\_\_

DETERMINATION NO.	EP-01-074 9.5-10'	EP-01-090 5-5.5'	EP-01-006 5-5.5'	EP-01-022 5-5.5'
FLASK NO.	5	6	7	8
WT. FLASK + WATER + SOIL, W <sub>1</sub>	732.17	726.97	738.12	731.48
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK + WATER, W <sub>2</sub>	680.99	684.72	683.25	687.77
DISH NO.	63	23	54	55
WT. DISH + DRY SOIL	306.77	229.09	316.01	297.16
WT. DISH	225.61	161.78	228.91	227.46
WT. SOIL, W <sub>s</sub>	81.16	67.31	87.90	69.70
SPECIFIC GRAVITY OF WATER AT T, G <sub>r</sub>	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.708	2.687	2.662	2.682

REMARKS

$$G_s = \frac{G_r W_s}{W_s + W_2 - W_1}$$

# SPECIFIC GRAVITY TEST

JB NO. - 6081

OWNER JMT Montzomery

TESTED BY LIF DATE 9/24/92

SOIL TYPE \_\_\_\_\_

DETERMINATION NO.	EP-01-052 2.5-3'	SD-45-001 0-0.2'	SB-29-022 0-5'	SB-29-013 0-5'
FLASK NO.	1	2	3	4
WT. FLASK + WATER + SOIL, W <sub>1</sub>	728.96	712.13	663.36	713.28
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK + WATER, W <sub>2</sub>	684.69	683.35	641.18	682.59
DISH NO.	100	102	62	7A
WT. DISH + DRY SOIL	214.67	192.38	251.85	149.37
WT. DISH	144.43	144.25	215.75	99.78
WT. SOIL, W <sub>s</sub>	70.24	48.13	36.10	49.59
SPECIFIC GRAVITY OF WATER AT T, G <sub>T</sub>	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.705	2.488	2.594	2.624

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. - 6031 OWNER JIM MONTGOMERY

TESTED BY LIF DATE 9/23/92

SOIL TYPE \_\_\_\_\_

DETERMINATION NO.	EP-01-023 6.5-7'	EP-01-059 0-1'	SS-37-008 0-0.2'	SS-26-034 0-0.2'
FLASK NO.	5	6	7	8
WT. FLASK + WATER + SOIL, W <sub>1</sub>	751.99	746.08	750.33	740.86
TEMPERATURE IN °C, T.	21°	21°	21°	21°
WT. FLASK + WATER, W <sub>2</sub>	680.80	684.58	683.00	687.52
DISH NO.	51	61	52	101
WT. DISH + DRY SOIL	330.17	322.85	334.91	233.15
WT. DISH	217.27	224.24	227.39	147.96
WT. SOIL, W <sub>s</sub>	112.90	98.61	107.52	85.19
SPECIFIC GRAVITY OF WATER AT T, G <sub>T</sub>	0.9998	0.9998	0.9998	0.9998
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.706	2.657	2.675	2.674

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

# SPECIFIC GRAVITY TEST

B NO. -6081

OWNER Jm Montisomery

TESTED BY LAF DATE 9/21/92

SOIL TYPE \_\_\_\_\_

DETERMINATION NO.	EP-01-049 0-1'	EP-01-044 5-5.5'	SB-29-029 0-5'	EP-01-104 3-4'
FLASK NO.	5	6	7	8
WT. FLASK + WATER + SOIL, W <sub>1</sub>	735.77	715.12	704.39	727.41
TEMPERATURE IN °C, T.	21.5°	21.5°	21.5°	21.5°
WT. FLASK + WATER, W <sub>2</sub>	680.76	684.56	682.95	687.51
DISH NO.	100	61	103	55
WT. DISH + DRY SOIL	232.34	273.56	182.65	290.44
WT. DISH	144.05	224.22	147.81	227.49
WT. SOIL, W <sub>s</sub>	88.29	49.34	34.84	62.96
SPECIFIC GRAVITY OF WATER AT T, G <sub>T</sub>	0.9997	0.9997	0.9997	0.9997
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.652	2.627	2.599	2.729

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

# SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER Jim Montemary

TESTED BY LFE DATE 9/21/92

SOIL TYPE \_\_\_\_\_

DETERMINATION NO.	EP-01-064 0.5-1'	SS-27-007 0-0.2'	SS-01-004 0-0.2'	EP-01-064 4.5-5'
FLASK NO.	1	2	3	4
WT. FLASK + WATER + SOIL, W <sub>1</sub>	741.53	732.28	671.05	734.91
TEMPERATURE IN °C, T.	19°	19.5°	19°	19°
WT. FLASK + WATER, W <sub>2</sub>	684.69	683.31	641.18	682.59
DISH NO.	63	102	2B	54
WT. DISH + DRY SOIL	317.12	223.08	210.06	312.96
WT. DISH	225.46	144.08	161.68	228.92
WT. SOIL, W <sub>s</sub>	91.66	79.00	48.38	84.04
SPECIFIC GRAVITY OF WATER AT T, G <sub>T</sub>	1.0002	1.0001	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.633	2.631	2.614	2.650

REMARKS

$$G_s = \frac{G_T W_s}{W_2 + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. - 6021 OWNER Jm Montgomery

TESTED BY LAF DATE 9/18/92

SOIL TYPE \_\_\_\_\_

DETERMINATION NO.	SB-42-006 2-4'	EP-01-050 4.5-5'	SB-26-009 0-3'	<del>SB-26-026</del> 0-0.2'
FLASK NO.	5	6	7	8
WT. FLASK + WATER + SOIL, W <sub>1</sub>	714.24	710.22	714.78	728.38
TEMPERATURE IN °C, T.	20°	20°	20°	20°
WT. FLASK + WATER, W <sub>2</sub>	680.90	684.65	683.15	687.70
DISH NO.	102	52	101	54
WT. DISH + DRY SOIL	196.56	268.23	199.07	294.52
WT. DISH	143.81	227.18	147.74	228.63
WT. SOIL, W <sub>s</sub>	52.75	41.05	51.33	65.89
SPECIFIC GRAVITY OF WATER AT T, G <sub>T</sub>	1.0000	1.0000	1.0000	1.0000
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.718	2.652	2.606	2.614

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER Jm Montemery

TESTED BY LAE DATE 9/18/92

SOIL TYPE \_\_\_\_\_

DETERMINATION NO.	33-28-008 0-0.2'	EP-01-105 7'-8'	EP-01-096 3.5-4'	SB-BK-001 0-1'
FLASK NO.	1	2	3	4
WT. FLASK + WATER + SOIL, W <sub>1</sub>	726.84	727.44	682.08	754.68
TEMPERATURE IN °C, T.	20°	20°	20°	20°
WT. FLASK + WATER, W <sub>2</sub>	684.52	683.24	641.06	682.42
DISH NO.	G2	G3	ZA	2B
WT. DISH + DRY SOIL	284.47	296.34	165.13	278.05
WT. DISH	215.74	225.02	99.82	161.74
WT. SOIL, W <sub>s</sub>	68.73	71.32	65.31	116.31
SPECIFIC GRAVITY OF WATER AT T, G <sub>T</sub>	1.0000	1.0000	1.0000	1.0000
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.602	2.630	2.689	2.640

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$



**SPECIFIC GRAVITY TESTS**

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING            SAMPLE 015 DEPTH 0

FIELD DENSITY BY           

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

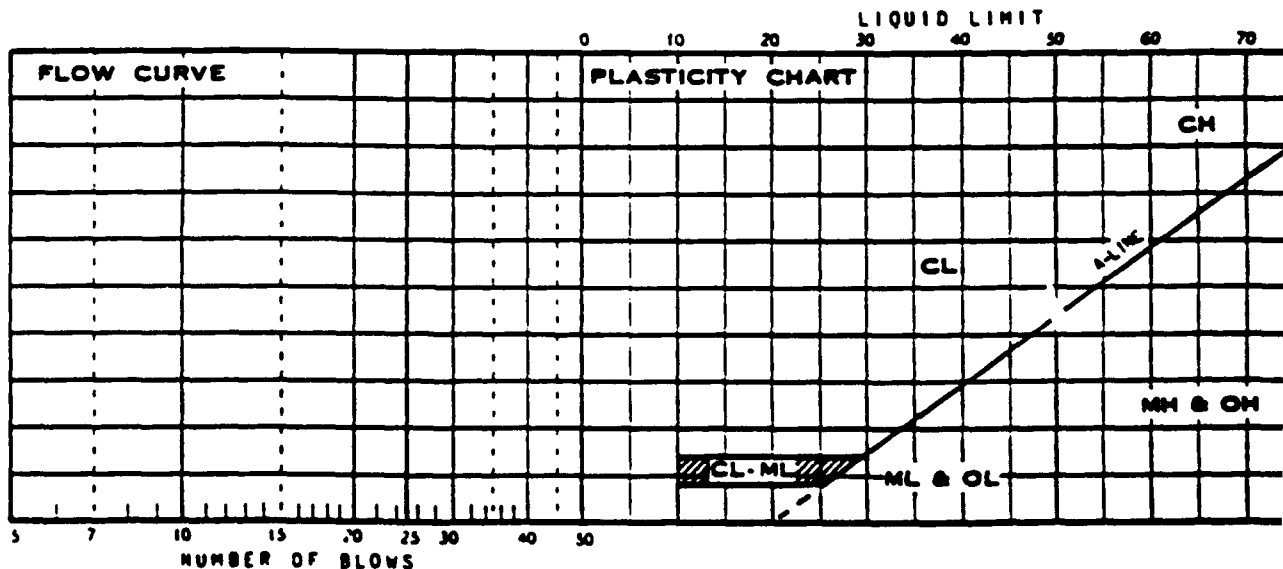
PLASTIC LIMIT BY W.F. BRADY

DETERMINATION	1	2	3	4	5	6
DISH	15	AL121	COULD NOT HANDLE (CORR.)			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL173	A-7	AL83	COULD NOT GET adequate blow count		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT						

MOISTURE CONTENT



SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					NP

James M. Montgomery  
P.O. 2942-0130

Site ID	SS-46-018	Wt soil and dish	397.9
		Dry soil & dish	393.5
Depth	0-0.2 feet	Dish	106.5
Moisture Content =	1.5		

#### SIEVE ANALYSIS

Dry weight of total sample= 287

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	81.31	71.67%	71.7	9.5
# 4	149.23	48.00%	48.0	4.8
# 10	176.61	38.46%	38.5	2.0
# 20	184.39	35.75%	35.8	0.85
# 40	203.17	29.21%	29.2	0.43
# 60	217.08	24.36%	24.4	0.25
# 100	227.21	20.83%	20.8	0.15
# 200	247.8	13.66%	13.7	0.075

# MECHANICAL ANALYSIS

SA

DATE 5/20/97

BY LAF

JOB NUMBER 1-1-1

OWNER/CLIENT Jm Montzomery

LOCATION \_\_\_\_\_

BORING GS-46

SAMPLE 018

DEPTH 0-0.2'

NUMBER OF RINGS	<u>big</u>	DISH	<u>309</u>
WT. OF RINGS & WET SOIL	.....	WT. OF DISH & WET SOIL	<u>397.9</u>
WT. OF RINGS	.....	WT. OF DISH & DRY SOIL	<u>393.5</u>
WT. OF WET SOIL	.....	WT. OF MOISTURE	.....
FIELD DENSITY	.....	WT. OF DISH	<u>106.5</u>
DRY DENSITY	.....	WT. OF DRY SOIL	.....
		FIELD MOISTURE CONTENT	<u>1.5</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		81.31		
		#4		149.23		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		176.61			
		#20		184.39			
		#40		203.17			
		#60		217.08			
		#100		227.21			
		#200		247.80			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO. -6091  
 CLIENT/OWNER Immortson  
 LOCATION 32-46 SAMPLE 002 DEPTH 0-0

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

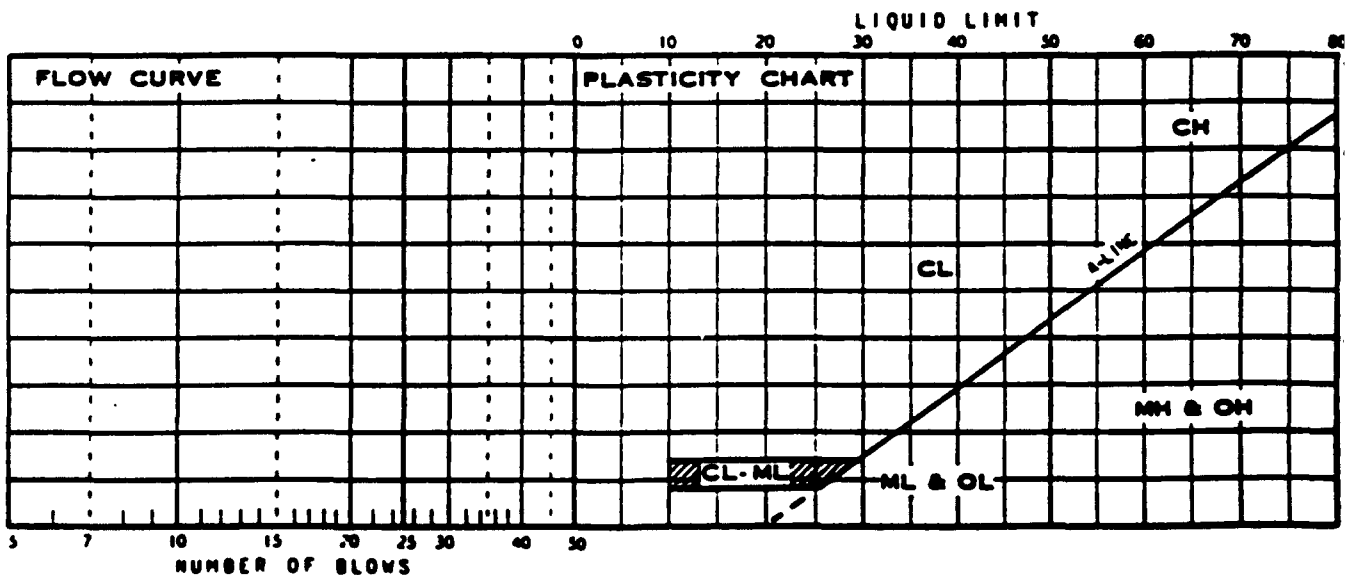
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF. 8/25/92

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL102</u>	<u>A6</u>				
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH						
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL135</u>	<u>AL101</u>	<u>AL115</u>			
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH						
WT OF DRY SOIL						
MOISTURE CONTENT						

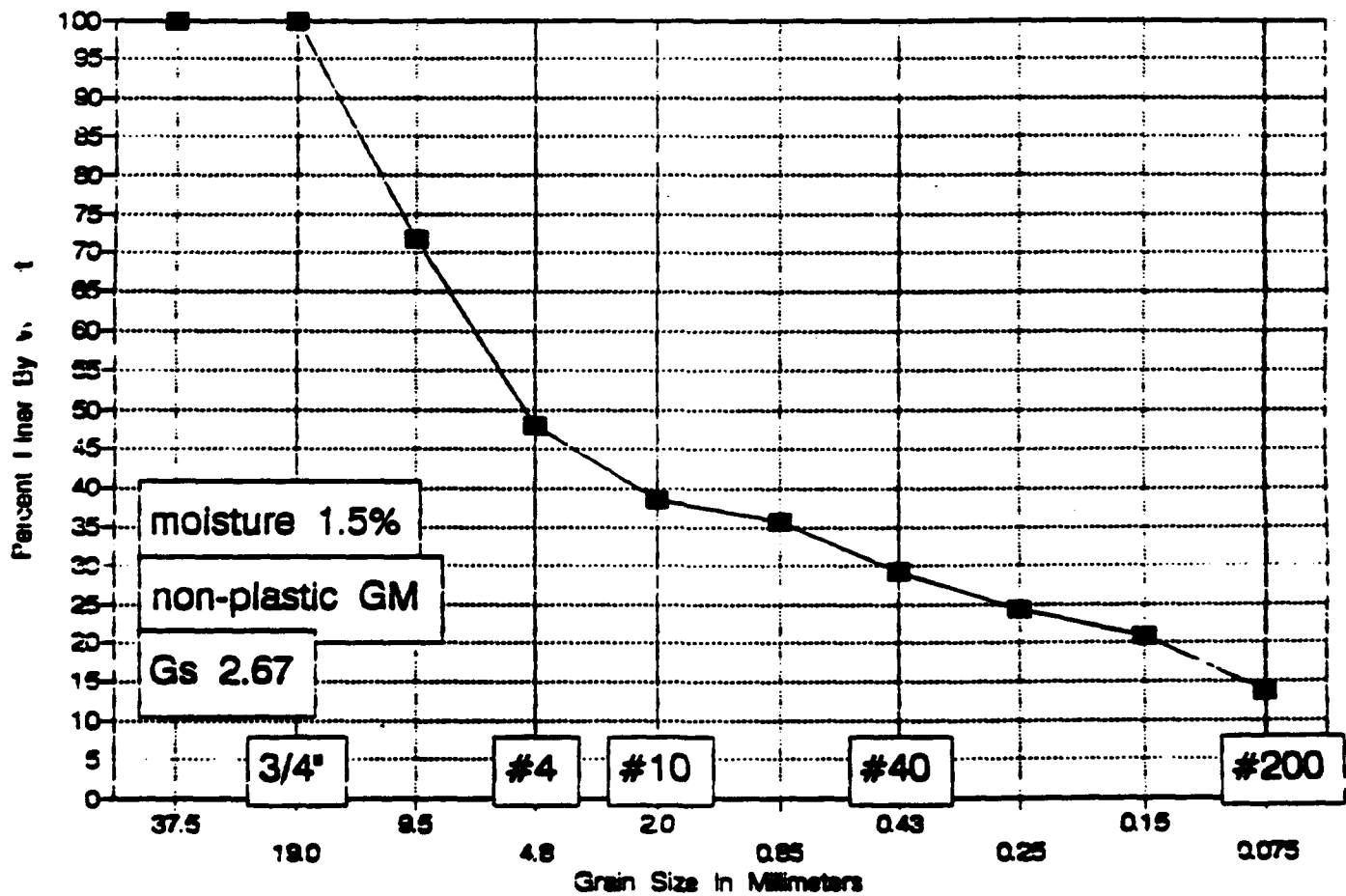


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site SS-46-018, Sample at 0 to 0.2 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	SS-46-009	Wt soil and dish	346.3
		Dry soil & dish	332.8
Depth	0-0.2 feet	Dish	110.7
Moisture Content =	6.1		

#### SIEVE ANALYSIS

Dry weight of total sample= 222.1

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	12.07	94.57%	94.6	9.5
# 4	33.69	84.83%	84.8	4.8
# 10	92.36	58.42%	58.4	2.0
# 20	120.83	45.60%	45.6	0.85
# 40	136.77	38.42%	38.4	0.43
# 60	150.35	32.31%	32.3	0.25
# 100	164.84	25.78%	25.8	0.15
# 200	185.04	16.69%	16.7	0.075

# MECHANICAL ANALYSIS

54

DATE 9/20/22

BY JE

JOB NUMBER -10091

OWNER/CLIENT Jim Matizomery

LOCATION \_\_\_\_\_

BORING SS-46

SAMPLE 009

DEPTH 0-0.2'

NUMBER OF RINGS	<u>back</u>	DISH	<u>210</u>
WT. OF RINGS & WET SOIL	<u>0</u>	WT. OF DISH & WET SOIL	<u>346.3</u>
WT. OF RINGS	<u>0</u>	WT. OF DISH & DRY SOIL	<u>332.8</u>
WT. OF WET SOIL	<u>0</u>	WT. OF MOISTURE	<u>13.5</u>
FIELD DENSITY	<u>0</u>	WT. OF DISH	<u>110.7</u>
DRY DENSITY	<u>0</u>	WT. OF DRY SOIL	<u>332.8</u>
		FIELD MOISTURE CONTENT	<u>6.1</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		12.07		
		#4		33.69		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCU. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		92.36			
		#20		120.83			
		#40		136.77			
		#60		150.35			
		#100		164.84			
		#200		185.04			
		PAN					
		TOTAL					



# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING 3542 SAMPLE 005 DEPTH 0-0.2

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

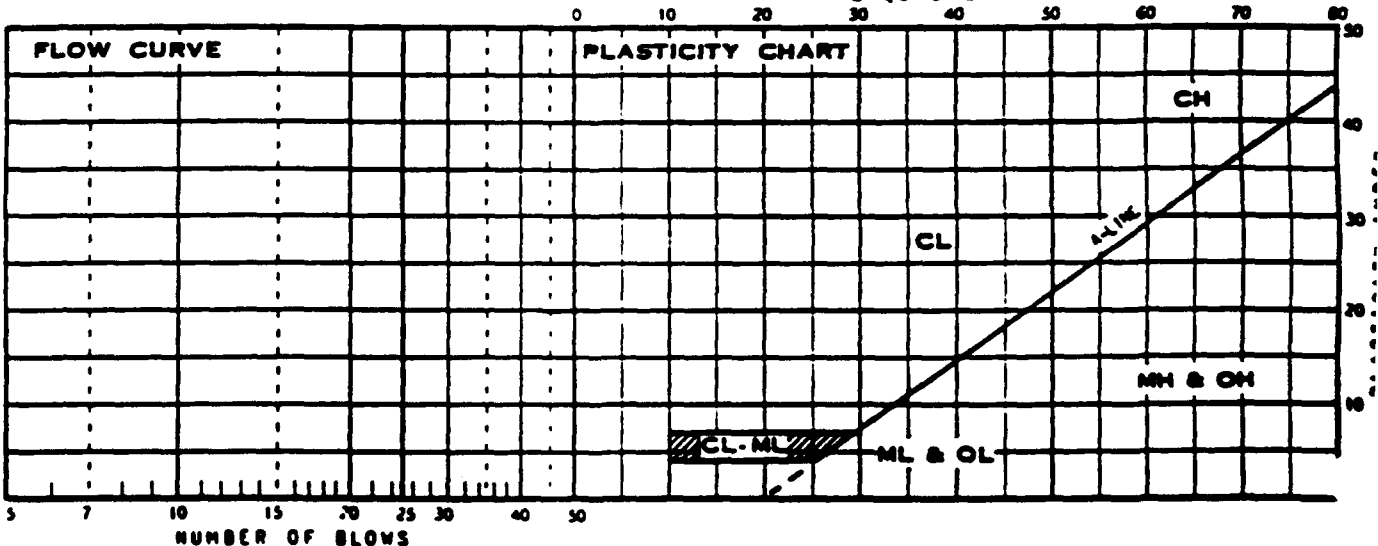
PLASTIC LIMIT BY LAF 91492

DETERMINATION	1	2	3	4	5	6
DISH	AL129	AL15	could not thread (silty)			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL114	AL98	AL11	could not get adequate blow count (25)		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

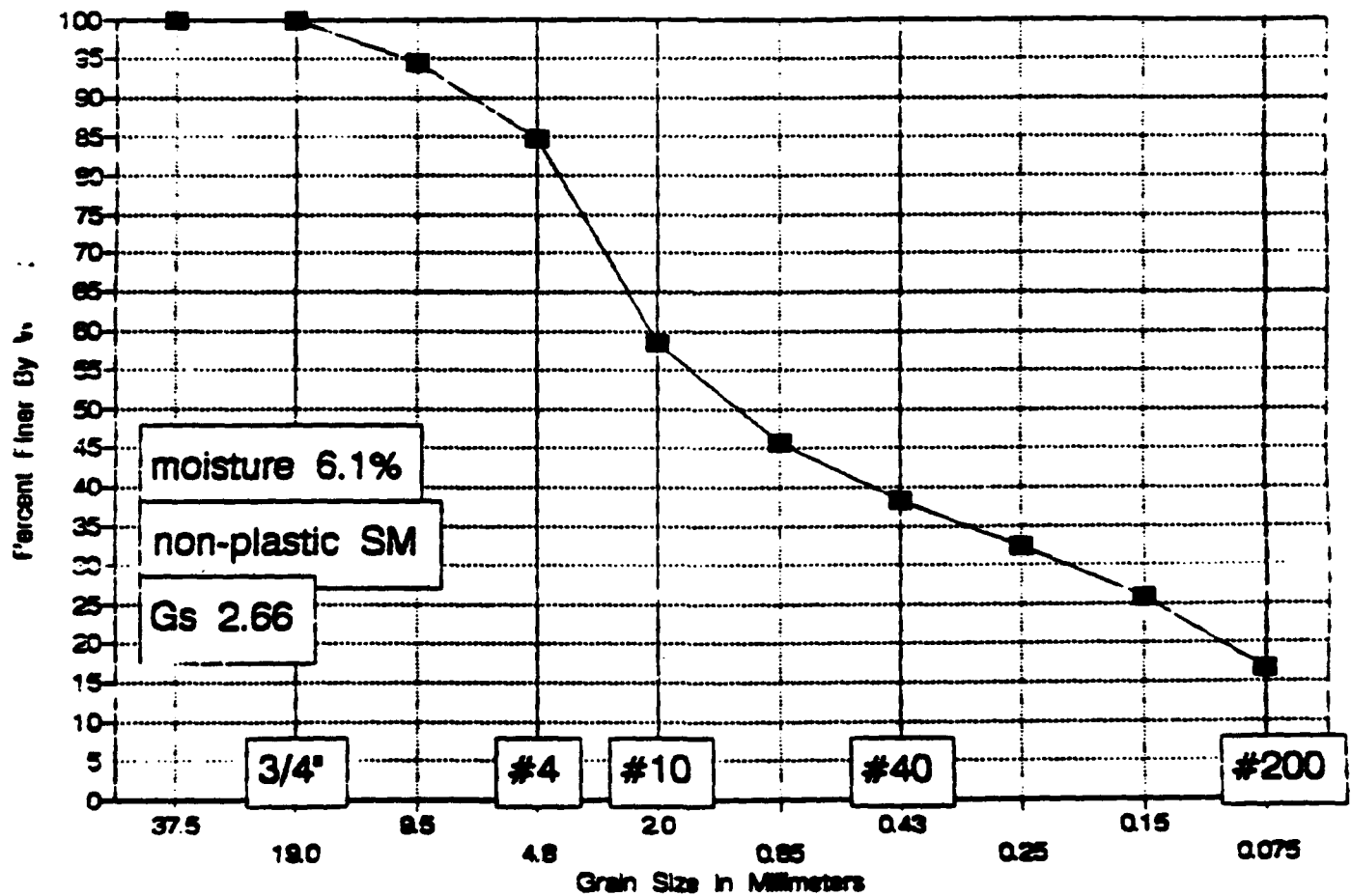


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					NP

# GRADATION CURVE

Site SS-46-009, Sample at 0 to 0.2 feet



# SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER IMMONITGOMERY

TESTED BY JL DATE 9/4/92

SOIL TYPE \_\_\_\_\_

DETERMINATION NO.	SB-01-008 100'	SB-01-003 10'	SB-01-007 25'	SB-01-001 20'
FLASK NO.	1	2	3	4
WT. FLASK + WATER + SOIL, W <sub>1</sub>	717.81	724.52	667.21	708.17
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK + WATER, W <sub>2</sub>	684.69	683.35	641.18	682.59
DISH NO.	63	54	52	61
WT. DISH + DRY SOIL	277.10	293.98	267.87	264.26
WT. DISH	224.73	228.79	226.97	223.71
WT. SOIL, W <sub>s</sub>	52.37	65.19	40.90	40.55
SPECIFIC GRAVITY OF WATER AT T, G <sub>T</sub>	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.721	2.715	2.751	2.709

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

# SPECIFIC GRAVITY TEST

JOB NO. - 6081

OWNER Jm montgomery

TESTED BY JN/LE DATE 2/15/92

SOIL TYPE \_\_\_\_\_

\* Note Below

DETERMINATION NO.	EP-01-032 5-5.5'	SB-42-011 2-4.5'	EP-01-007 5-5.5'	EP-01-001 4-5'
FLASK NO.	1	2	3	4
WT. FLASK + WATER + SOIL, W <sub>1</sub>	716.86	729.68	691.01	732.98
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK + WATER, W <sub>2</sub>	684.69	683.35	641.18	682.59
DISH NO.	51	55	52	62
WT. DISH + DRY SOIL	268.47	301.96	307.05	297.07
WT. DISH	217.19	227.49	227.13	215.96
WT. SOIL, W <sub>s</sub>	51.28	74.47	79.92	81.11
SPECIFIC GRAVITY OF WATER AT T, G <sub>T</sub>	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.684	2.647	2.657	2.641

## REMARKS

\* SB-29-034, 0-5' could not run test - not enough sample

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

# SPECIFIC GRAVITY TEST

JOB NO. - 6021 OWNER Jm Montgomery

TESTED BY LIF DATE 9/17/92

SOIL TYPE \_\_\_\_\_

DETERMINATION NO.	EP-01-053 6.5-7'	EP-01-063 1-2'	<del>EP-01-006</del> 0-0.2'	EP-01-066 5-5.5'
FLASK NO.	1	2	3	4
WT. FLASK + WATER + SOIL, W <sub>1</sub>	710.21	722.51	694.33	711.59
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK + WATER, W <sub>2</sub>	684.09	683.35	641.18	682.59
DISH NO.	2B	2A	5A	63
WT. DISH + DRY SOIL	202.09	162.19	313.65	271.88
WT. DISH	161.84	99.82	228.81	225.24
WT. SOIL, W <sub>s</sub>	40.25	62.37	84.84	46.64
SPECIFIC GRAVITY OF WATER AT T, G <sub>T</sub>	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.733	2.688	2.678	2.645

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER Jm Montemore

TESTED BY LAF DATE 9/17/92

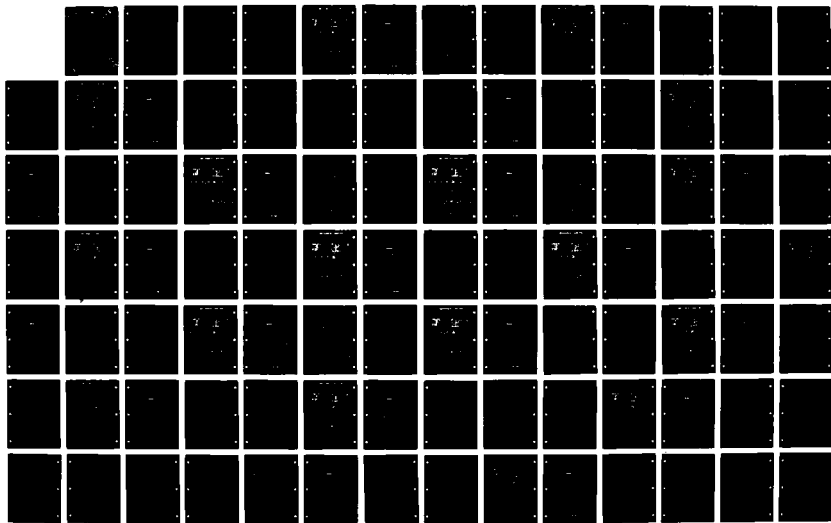
SOIL TYPE \_\_\_\_\_

DETERMINATION NO.	EP-01-012 2'	EP-01-037 65-7'	SB-26-005 0-3'	EP-01-084 45-5'
FLASK NO.	5	6	7	8
WT. FLASK + WATER + SOIL, W <sub>1</sub>	714.65	715.46	705.97	703.53
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK + WATER, W <sub>2</sub>	680.99	684.72	683.25	687.77
DISH NO.	51	52	62	64
WT. DISH + DRY SOIL	270.99	275.68	252.41	187.70
WT. DISH	217.23	226.89	215.72	162.57
WT. SOIL, W <sub>s</sub>	53.36	48.79	36.69	25.13
SPECIFIC GRAVITY OF WATER AT T, G <sub>T</sub>	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.709	2.704	2.627	2.683

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

AD-A282 574 TROUBLE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SANDS 14718  
VOLUME 2 APPENDICES A - J REVISION(U) MONTGOMERY  
WATSON WALNUT CREEK CA DEC 93 XA-USAEC  
UNCLASSIFIED DAAA15-90-D-0011 NL

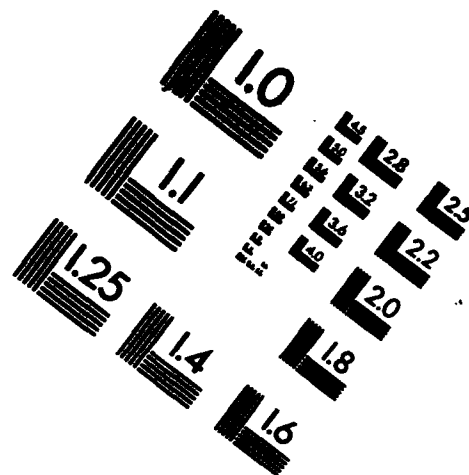
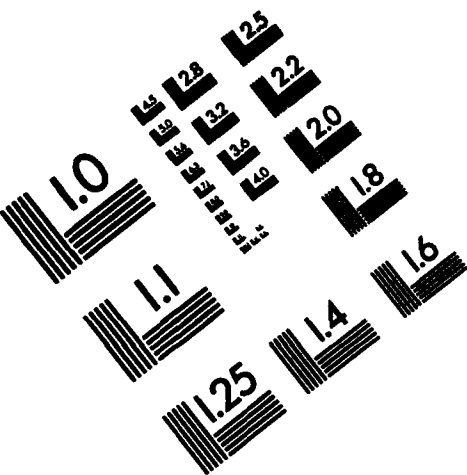




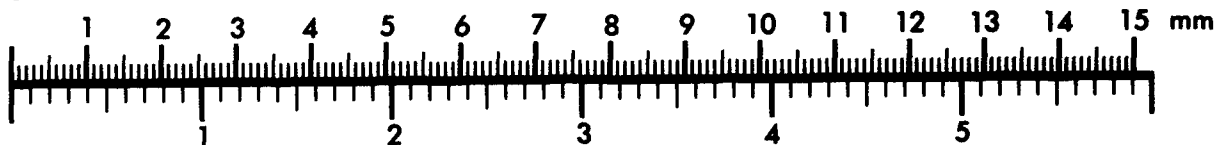
AIMM

Association for Information and Image Management

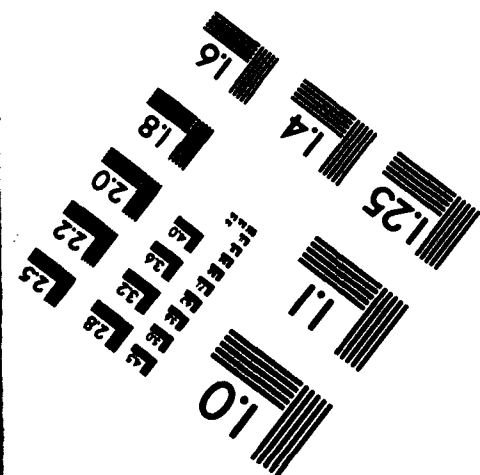
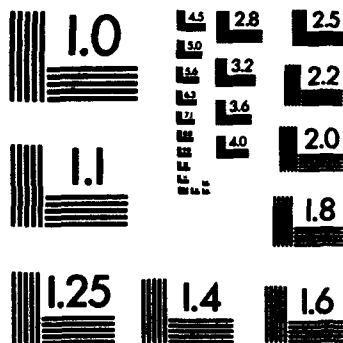
1100 Wayne Avenue, Suite 1100  
Silver Spring, Maryland 20910  
301/587-8202



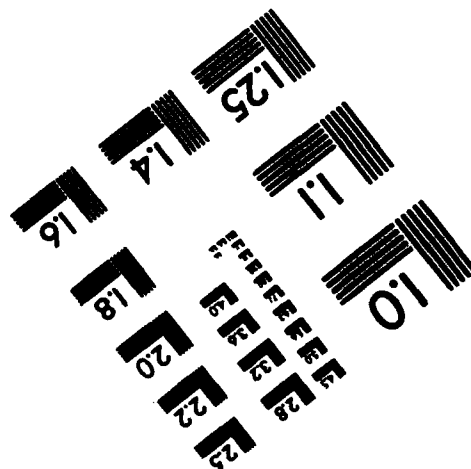
Centimeter



Inches



MANUFACTURED TO AIMM STANDARDS  
BY APPLIED IMAGE, INC.





# SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER JIMMONTGOMERY

TESTED BY JL DATE 8/30/92

SOIL TYPE \_\_\_\_\_

DETERMINATION NO.	SS-20-016 0-0.2'	SS-38-002 0-0.2'	SS-46-018 0-0.2'	EP-01-017 0-1'
FLASK NO.	1	2	3	4
WT. FLASK + WATER + SOIL, W <sub>1</sub>	735.40	738.28	721.21	711.36
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK + WATER, W <sub>2</sub>	684.69	683.35	641.18	682.59
DISH NO.	23	54	62	52
WT. DISH + DRY SOIL	243.48	317.22	343.74	272.73
WT. DISH	161.75	228.73	215.64	226.76
WT. SOIL, W <sub>s</sub>	80.73	88.49	128.1	45.97
SPECIFIC GRAVITY OF WATER AT T, G <sub>T</sub>	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.690	2.637	2.665	2.673

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

# SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER JIMMONTGOMERY

TESTED BY Jh DATE 9/30/92

SOIL TYPE \_\_\_\_\_

DETERMINATION NO.	GP-01-100 5-5.5'	SB-01-005 25'	SB-01-002 15'	SB-01-006 45'
FLASK NO.	5	6	7	8
WT. FLASK + WATER + SOIL, W <sub>1</sub>	702.20	717.25	745.22	737.05
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK + WATER, W <sub>2</sub>	680.99	684.72	683.25	687.77
DISH NO.	91	63	41	55
WT. DISH + DRY SOIL	250.33	275.32	322.30	305.49
WT. DISH	216.89	223.65	223.17	227.66
WT. SOIL, W <sub>s</sub>	33.44	51.67	99.13	77.83
SPECIFIC GRAVITY OF WATER AT T, G <sub>T</sub>	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.735	2.700	2.668	2.727

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

James M. Montgomery  
P.O. 2942-0130

Site ID	SS-28-008	Wt soil and dish	235.6
		Dry soil & dish	233.2
Depth	0-0.2 feet	Dish	107.4
Moisture Content =	1.9		

#### SIEVE ANALYSIS

Dry weight of total sample= 125.8

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	22.6	82.03%	82.0	9.5
# 4	51.6	58.98%	59.0	4.8
# 10	70.9	43.64%	43.6	2.0
# 20	80.6	35.93%	35.9	0.85
# 40	85	32.43%	32.4	0.43
# 60	88.4	29.73%	29.7	0.25
# 100	93.8	25.44%	25.4	0.15
# 200	103.4	17.81%	17.8	0.075

# MECHANICAL ANALYSIS

SA

DATE 9/3/92 BY LAF  
 JOB NUMBER -6001 OWNER/CLIENT Jim Montgomery  
 LOCATION \_\_\_\_\_  
 BORING CG-28 SAMPLE 008 DEPTH 0-0.2'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>98</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>235.6</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>233.2</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>107.4</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>1.9</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		22.6		
		#4		51.6		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		70.9			
		#20		80.6			
		#40		85.0			
		#60		88.4			
		#100		93.8			
		#200		103.4			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO. - 6081

CLIENT/OWNER IMMIGRATION

LOCATION

BORING SS 26 SAMPLE 005 DEPTH 0-0.2

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

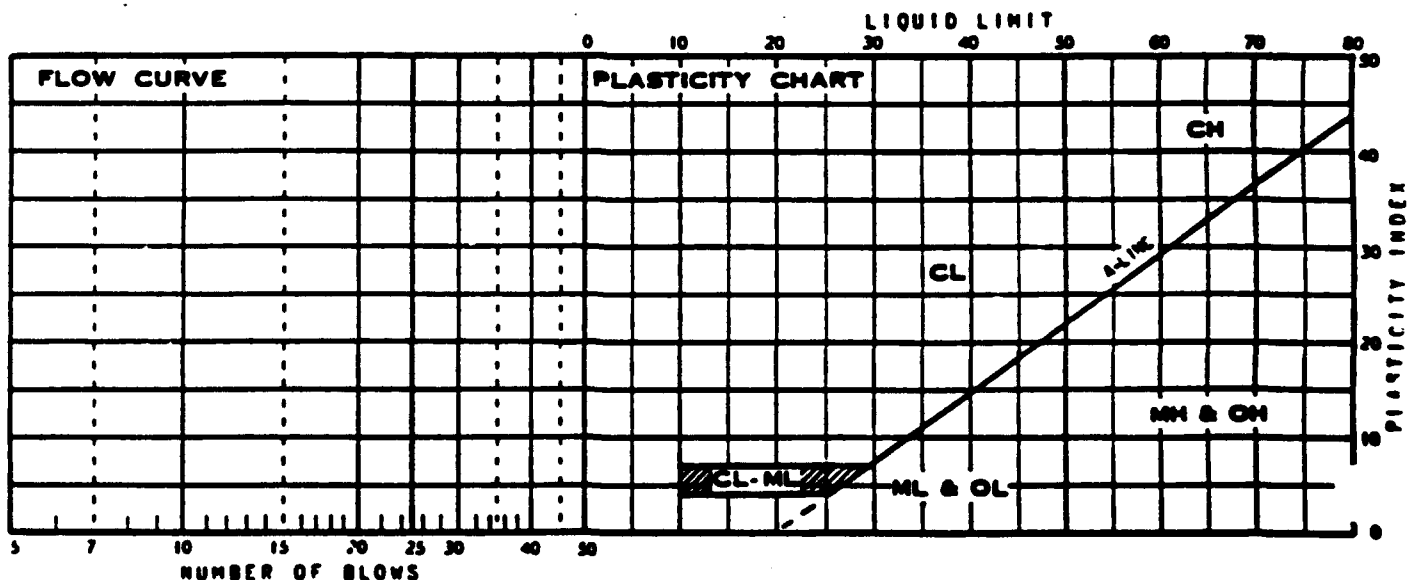
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9.992

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 97</u>	<u>AL 118</u>	<u>could not thread</u>			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 109</u>	<u>193</u>	<u>9A</u>	<u>could not get adequate blow count (25)</u>		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						

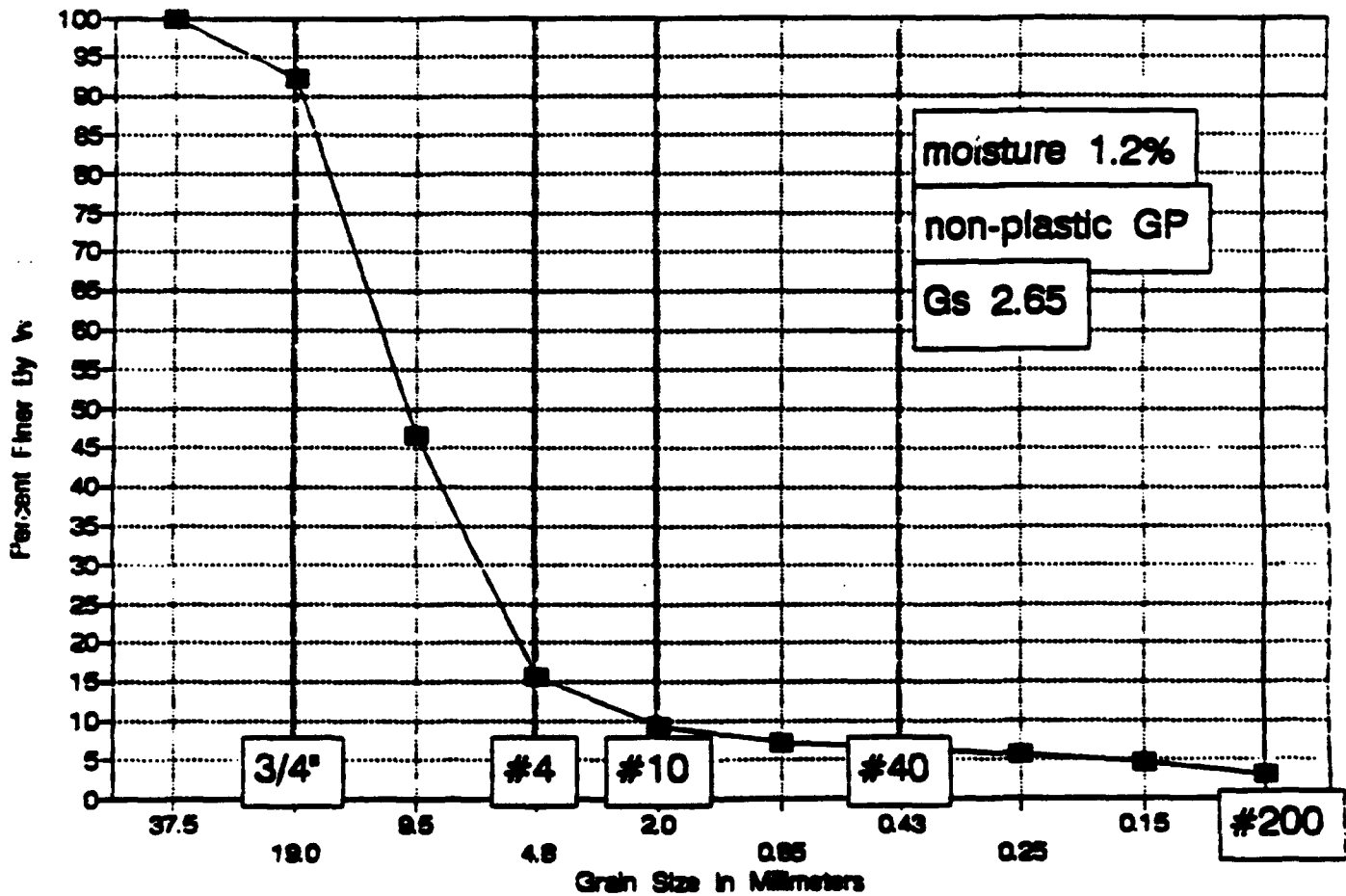


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site SS-34-006, Sample at 0 to 0.2 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	SS-34-006	Wt soil and dish	334.8
Depth	0-0.2 feet	Dry soil & dish	332.2
		Dish	110
Moisture Content =	1.2		

#### SIEVE ANALYSIS

Dry weight of total sample= 222.2

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	17.11	92.30%	92.3	19.0
3/8 inch	118.85	46.51%	46.5	9.5
# 4	187.59	15.58%	15.6	4.8
# 10	201.71	9.22%	9.2	2.0
# 20	206.17	7.21%	7.2	0.85
# 40	208.05	6.37%	6.4	0.43
# 60	209.73	5.61%	5.6	0.25
# 100	211.88	4.64%	4.6	0.15
# 200	215.41	3.06%	3.1	0.075

# MECHANICAL ANALYSIS

DATE 8/20/90 BY LF  
 JOB NUMBER -6021 OWNER/CLIENT Johnston Company  
 LOCATION \_\_\_\_\_  
 BORING SS-34 SAMPLE 006 DEPTH 0-0.2'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>212</u>
WT. OF RINGS & WET SOIL	.....	WT. OF DISH & WET SOIL	<u>334.6</u>
WT. OF RINGS	.....	WT. OF DISH & DRY SOIL	<u>332.2</u>
WT. OF WET SOIL	.....	WT. OF MOISTURE	.....
FIELD DENSITY	.....	WT. OF DISH	<u>110.0</u>
DRY DENSITY	.....	WT. OF DRY SOIL	.....
		FIELD MOISTURE CONTENT	<u>1.2</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		0		
		3/4"		17.11		
		3/8"		110.05		
		#4		187.59		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		201.71			
		#20		206.17			
		#40		208.05			
		#60		209.73			
		#100		211.88			
		#200		215.41			
		PAN					
		TOTAL					



# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING G2-24 SAMPLE 100 DEPTH 0-02

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

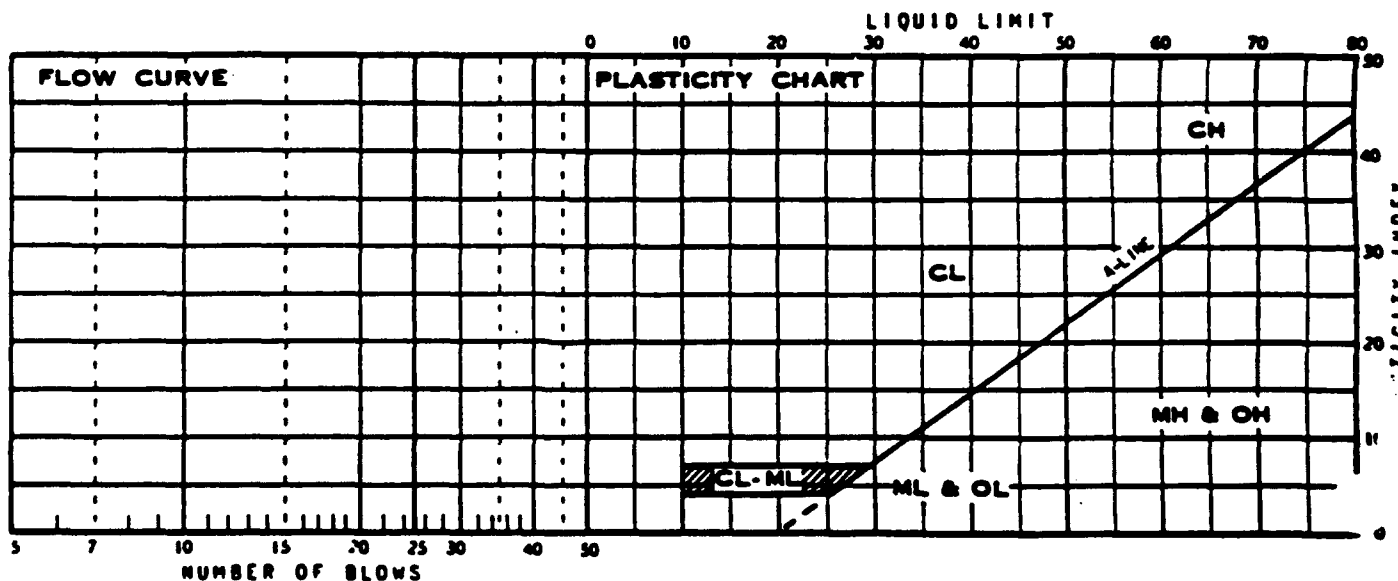
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY U.E. 824-92

DETERMINATION	1	2	3	4	5	6
DISH	<u>61</u>	<u>AL 90</u>	<u>difficult to thread</u>			
WT OF DISH + WET SOIL	<u>12.56</u>	<u>10.89</u>				
WT OF DISH + DRY SOIL	<u>10.62</u>	<u>4.16</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT	<u>21.04</u>	<u>21.21</u>	<u><math>\bar{X} = 21</math></u>			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 123</u>	<u>A-7</u>	<u>AL 93</u>	<u>could not get adequate blow count</u>		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE					<u>(75)</u>	
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						

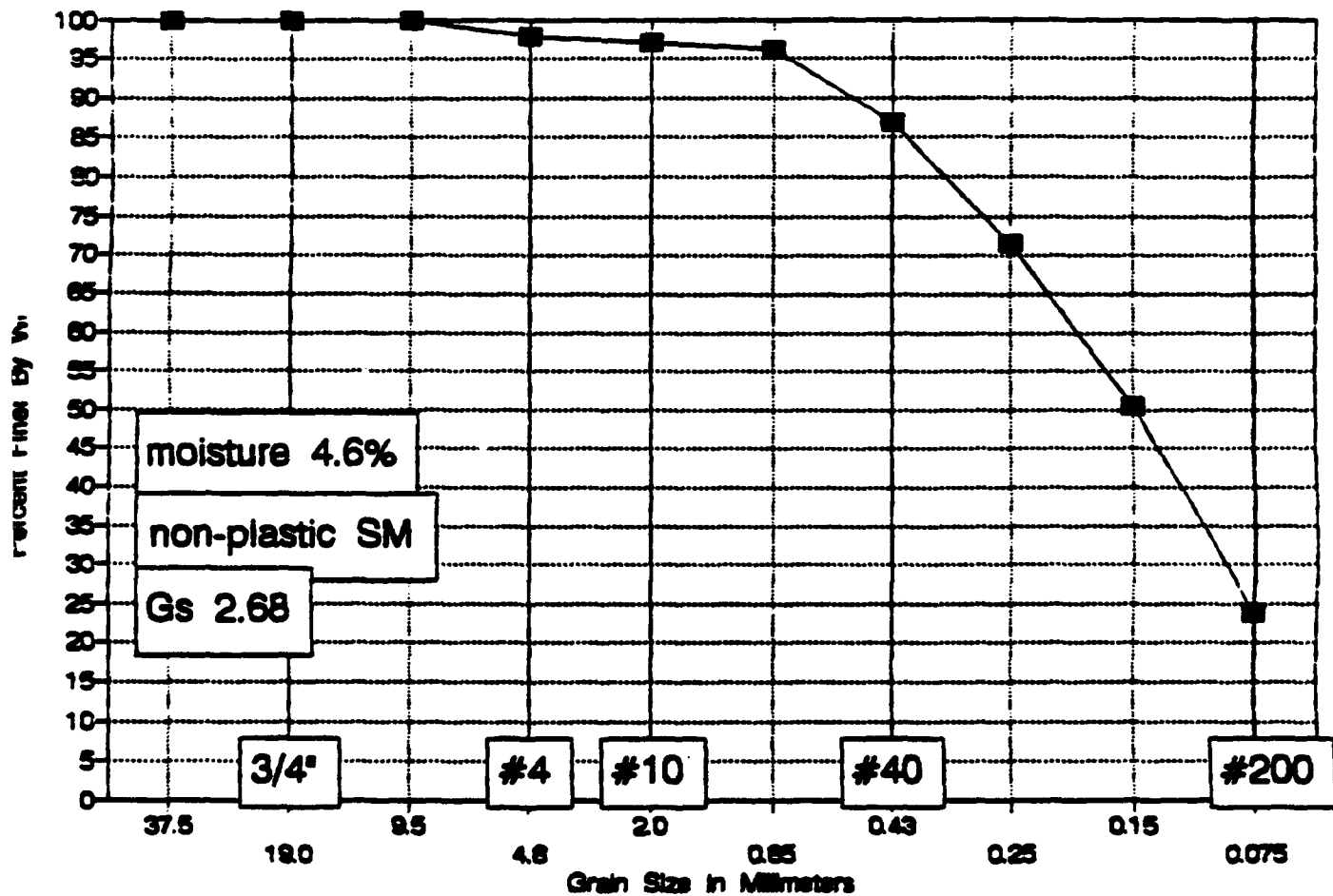


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
			<u>21</u>		<u>NP</u>

# GRADATION CURVE

Site SS-37-008, Sample at 0 to 0.2 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	SS-37-008	Wt soil and dish	251
		Dry soil & dish	244.8
Depth	0-0.2 feet	Dish	108.8
Moisture Content =	4.6		

#### SIEVE ANALYSIS

Dry weight of total sample= 136

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	3	97.79%	97.8	4.8
# 10	3.9	97.13%	97.1	2.0
# 20	5.2	96.18%	96.2	0.85
# 40	18	86.76%	86.8	0.43
# 60	38.7	71.54%	71.5	0.25
# 100	67.3	50.51%	50.5	0.15
# 200	103.7	23.75%	23.8	0.075

# MECHANICAL ANALYSIS

SA

DATE 9/3/92

BY LAF

JOB NUMBER -6081

OWNER/CLIENT JM Montgomery

LOCATION \_\_\_\_\_

BORING SS-37

SAMPLE 008

DEPTH 0-0.2'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>304</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>251.0</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>244.8</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>100.0</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>4.6</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		3.0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		3.9			
		#20		5.2			
		#40		18.0			
		#60		38.7			
		#100		67.3			
		#200		103.7			
		PAN					
		TOTAL					

James M. Montgomery  
P.O. 2942-0130

Site ID	SS-42-008	Wt soil and dish	260.2
		Dry soil & dish	257.4
Depth	0-0.2 feet	Dish	112.3
Moisture Content =	1.9		

### SIEVE ANALYSIS

Dry weight of total sample= 145.1

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	5.1	96.49%	96.5	9.5
# 4	13.9	90.42%	90.4	4.8
# 10	28.1	80.63%	80.6	2.0
# 20	44	69.68%	69.7	0.85
# 40	56	61.41%	61.4	0.43
# 60	66.9	53.89%	53.9	0.25
# 100	80.6	44.45%	44.5	0.15
# 200	99.9	31.15%	31.2	0.075

# MECHANICAL ANALYSIS

JA

DATE 9/10/92 BY LAF  
 JOB NUMBER -6221 OWNER/CLIENT Jm montgomery  
 LOCATION \_\_\_\_\_  
 BORING SS-42 SAMPLE 008 DEPTH 0-0.2'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>302</u>
WT. OF RINGS & WET SOIL	/	WT. OF DISH & WET SOIL	<u>260.2</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>257.4</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>112.3</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>1.9</u>

WASH SEIVE \_\_\_\_\_ DRY SEIVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		<u>0</u>		
		3/8"		<u>5.1</u>		
		#4		<u>13.9</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>28.1</u>			
		#20		<u>44.0</u>			
		#40		<u>56.0</u>			
		#60		<u>66.9</u>			
		#100		<u>80.6</u>			
		#200		<u>99.9</u>			
		PAN					
		TOTAL					

LEADERSHIP CLASSIFICATION

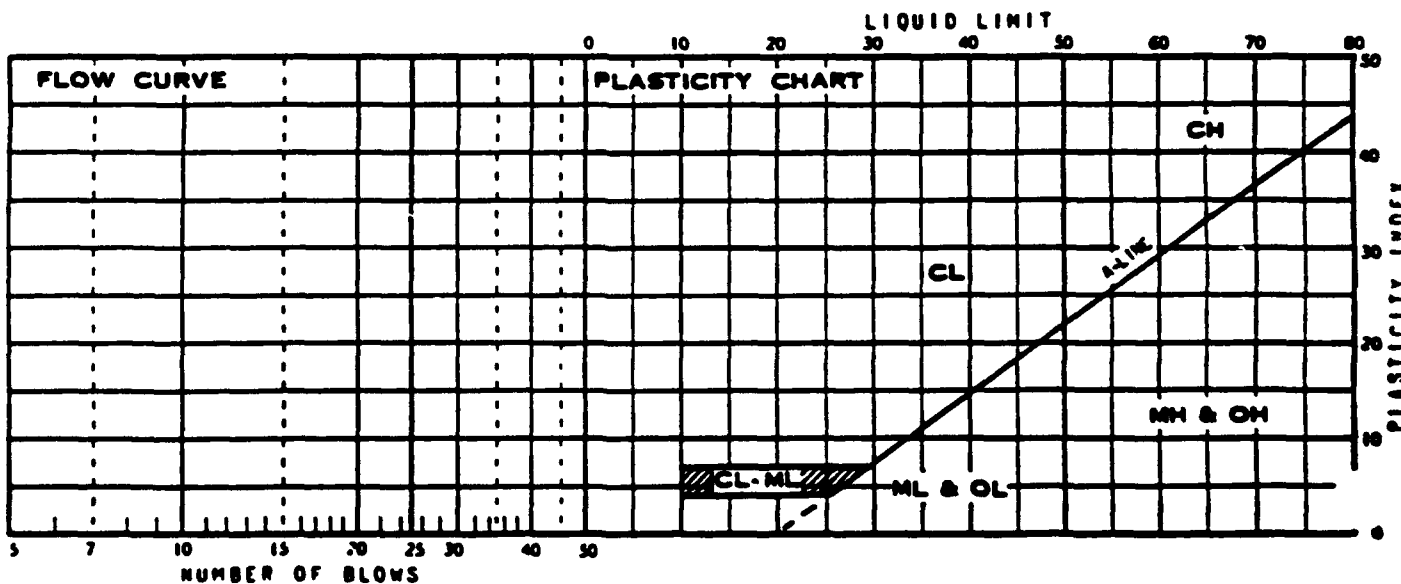
BORING SS-37 SAMPLE 006 DEPTH 0-0.2

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	_____	_____
WT OF MOISTURE		
WT OF DISH	_____	_____
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

DETERMINATION	1	2	3	4	5	6
DISH	13	20	could not thread			
WT OF DISH + WET SOIL			(sandy)			
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE	—	—	—	—	—	—
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL	—	—	—	—	—	—
MOISTURE CONTENT						

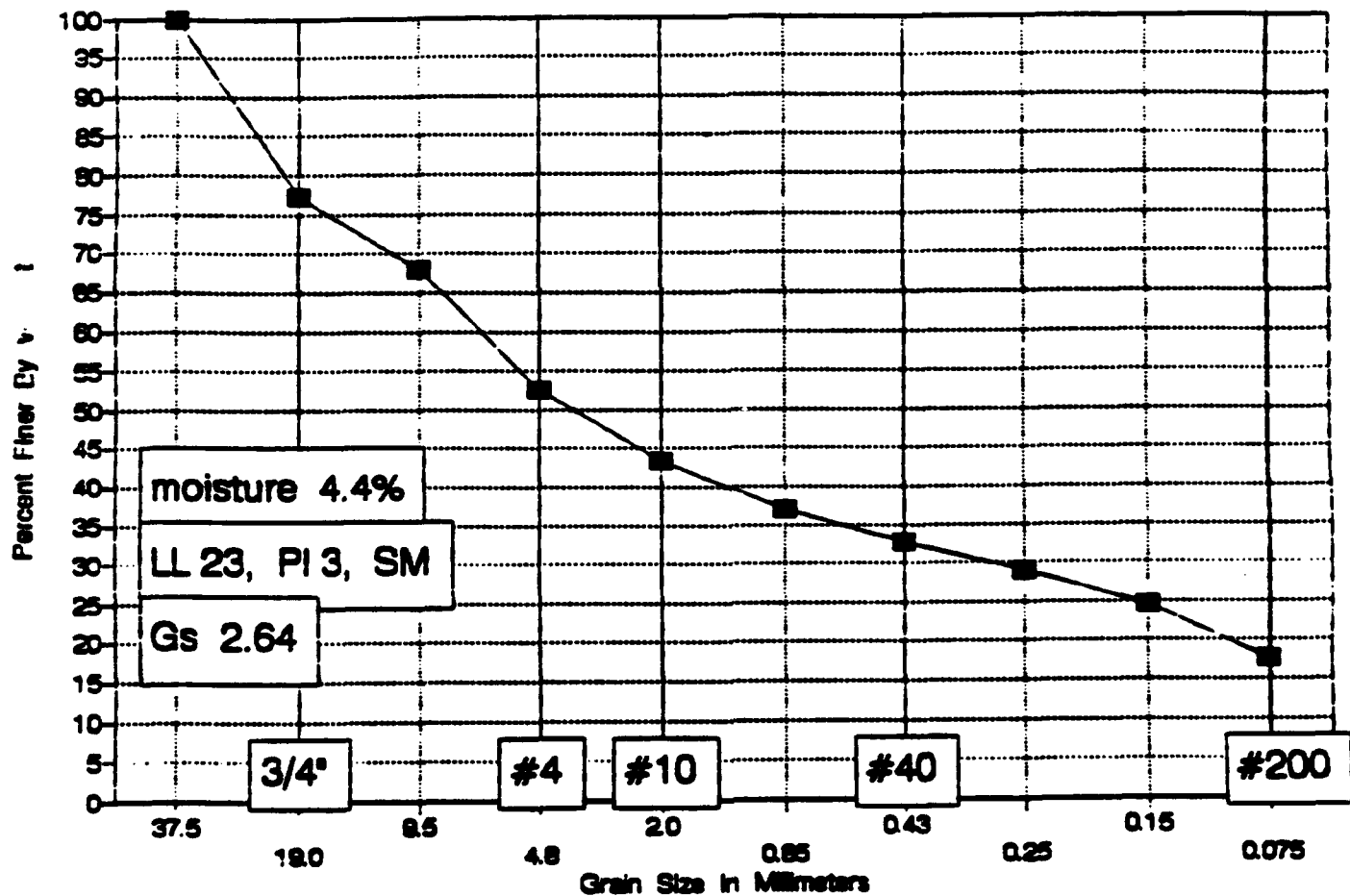
DETERMINATION	1	2	3	4	5	6
DISH	AL109	183	9A	could not get		
NUMBER OF BLOWS				adequate		
WT OF DISH + WET SOIL				know count		
WT OF DISH + DRY SOIL	—	—	—	—	(25)	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						



DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					NP

**Site SS-38-002, Sample at 0 to 0.2 feet**

\_\_\_\_\_





# SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER Jm monizomery

TESTED BY LCIF DATE 9/15/92

SOIL TYPE \_\_\_\_\_

DETERMINATION NO.	EP-01-058 5-5.5'	SB-29-003 0-4.5'	SB-29-002 0-2.5'	SB-21-001 0-0.2'
FLASK NO.	5	6	7	8
WT. FLASK + WATER + SOIL, W <sub>1</sub>	751.02	712.49	708.45	752.67
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK + WATER, W <sub>2</sub>	680.99	604.72	603.25	607.77
DISH NO.	NB	46	64	61
WT. DISH + DRY SOIL	277.88	209.89	204.27	328.77
WT. DISH	167.00	164.78	162.63	224.19
WT. SOIL, W <sub>s</sub>	110.88	45.11	41.64	104.58
SPECIFIC GRAVITY OF WATER AT T, G <sub>T</sub>	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.715	2.602	2.533	2.636

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

# SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER JIM MONTGOMERY

TESTED BY LIE DATE 9/16/92

SOIL TYPE \_\_\_\_\_

DETERMINATION NO.	EP-01-065 4.5-5'	SB-29-019 0-5'	EP-01-027 3.5-4'	SB-29-019 0-5'
FLASK NO.	1	2	3	4
WT. FLASK + WATER + SOIL, W <sub>1</sub>	717.89	708.73	664.99	702.34
TEMPERATURE IN °C, T.	19.5°	19.5°	19.5°	19.5°
WT. FLASK + WATER, W <sub>2</sub>	684.63	683.31	641.12	682.48
DISH NO.	100	101	102	103
WT. DISH + DRY SOIL	196.53	188.45	181.51	180.30
WT. DISH	144.09	147.74	143.78	147.76
WT. SOIL, W <sub>s</sub>	52.44	40.71	37.73	32.54
SPECIFIC GRAVITY OF WATER AT T, G <sub>T</sub>	1.0001	1.0001	1.0001	1.0001
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.734	2.663	2.723	2.567

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

# SPECIFIC GRAVITY TEST

JOB NO. 03461-029-6011

OWNER JMMONTGOMERY

TESTED BY JL DATE 8/26/92

SOIL TYPE \_\_\_\_\_

DETERMINATION NO.	SB-01-004 20' -	SB-26-013 0-3'	SB-9K-006 60'	SB-46-014 1-1.2'
FLASK NO.	1	2	3	4
WT. FLASK + WATER + SOIL, W <sub>1</sub>	718.93	734.46	691.50	720.04
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK + WATER, W <sub>2</sub>	684.69	683.35	644.18	682.99
DISH NO.	61	51	55	52
WT. DISH + DRY SOIL	277.30	298.92	306.68	287.01
WT. DISH	223.77	217.27	227.83	226.95
WT. SOIL, W <sub>s</sub>	53.53	81.65	78.85	60.06
SPECIFIC GRAVITY OF WATER AT T, G <sub>T</sub>	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.776	2.674	2.764	2.657

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

# SPECIFIC GRAVITY TEST

JOB NO. 05461-029-6081 OWNER IMMONTSONIERY

TESTED BY JL DATE 8/26/92

SOIL TYPE \_\_\_\_\_

DETERMINATION NO.	<del>SB-46-015</del> 1-1.2'	SS-34-006 0-0.2'	SS-46-009 0-0.2'	EP-01-116 5.5-6'
FLASK NO.	5	6	7	8
WT. FLASK + WATER + SOIL, W <sub>1</sub>	736.08	739.07	754.99	702.34
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK + WATER, W <sub>2</sub>	680.99	684.72	683.25	687.77
DISH NO.	63	46	64	28
WT. DISH + DRY SOIL	311.56	292.19	277.82	184.76
WT. DISH	224.11	164.85	162.79	161.93
WT. SOIL, W <sub>s</sub>	87.45	87.34	115.03	22.83
SPECIFIC GRAVITY OF WATER AT T, G <sub>T</sub>	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G <sub>s</sub>	2.703	2.648	2.658	2.765

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_

LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. 105  
 CLIENT/OWNER Mr. Montsomerly  
 LOCATION \_\_\_\_\_  
 BORING G2-35 SAMPLE 002 DEPTH 0-0.2

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

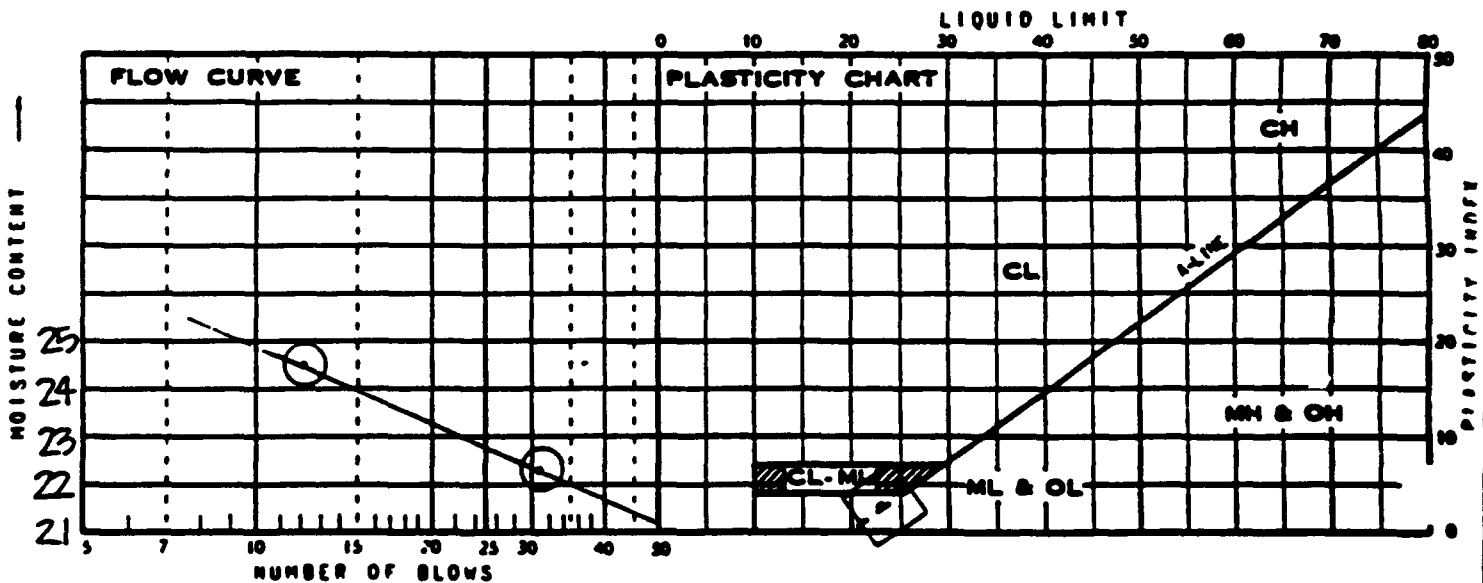
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE. 8/25/92

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL117</u>	<u>AL70</u>				
WT OF DISH + WET SOIL	<u>16.78</u>	<u>17.72</u>				
WT OF DISH + DRY SOIL	<u>14.22</u>	<u>15.01</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT	<u>19.97</u>	<u>19.91</u>	<u><math>\bar{x} = 20</math></u>			

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>11</u>	<u>AL96</u>	<u>AL104</u>	<u>only enough sample to get 2 parts</u>		
NUMBER OF BLOWS	<u>31</u>	<u>12</u>				
WT OF DISH + WET SOIL	<u>13.95</u>	<u>12.87</u>				
WT OF DISH + DRY SOIL	<u>11.66</u>	<u>10.61</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT	<u>77.32</u>	<u>74.54</u>				

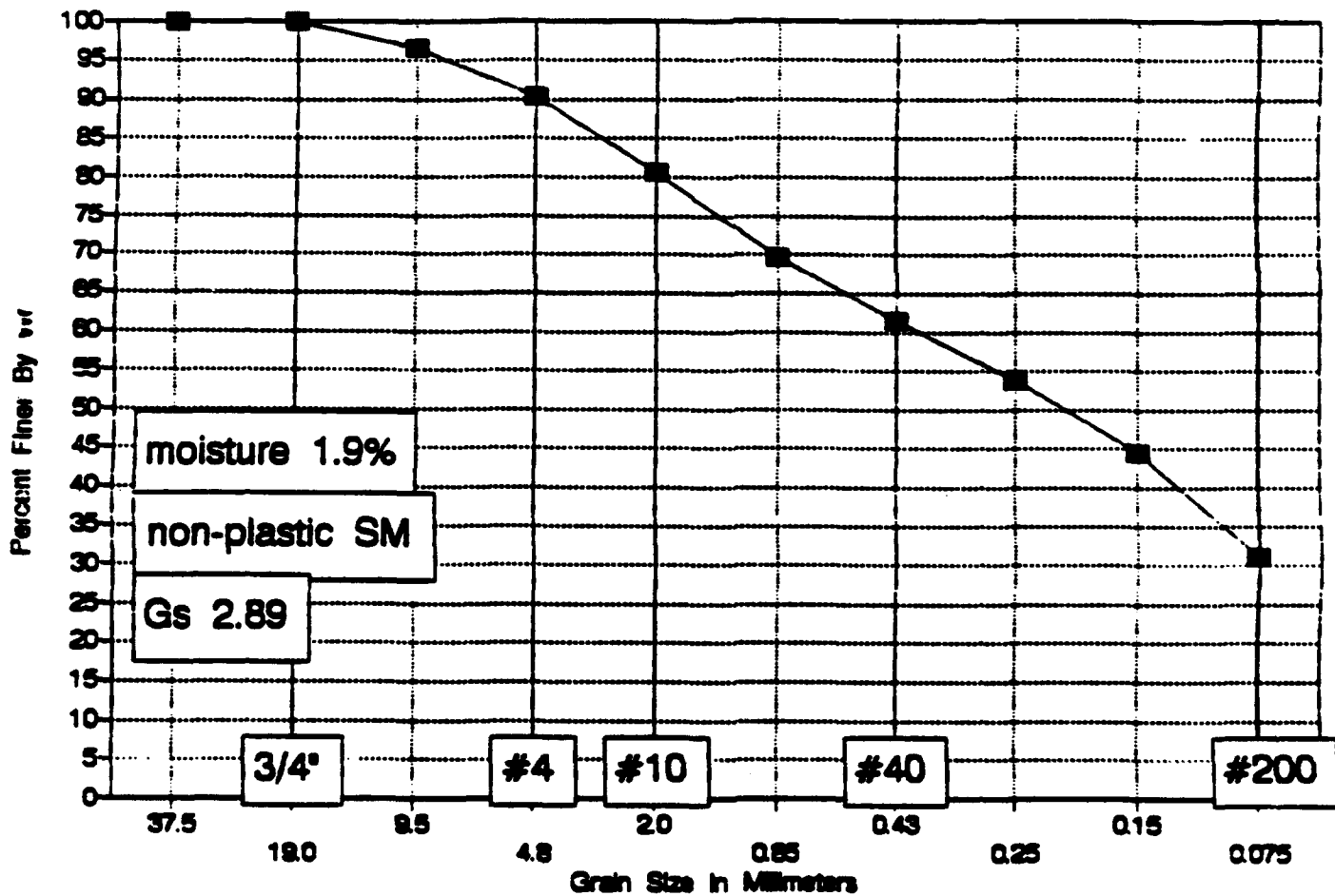


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		<u>73</u>	<u>20</u>	<u>3</u>	<u>ML</u>

# GRADATION CURVE

Site SS-42-008, Sample at 0 to 0.2 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	SS-38-002	Wt soil and dish	360
Depth	0-0.2 feet	Dry soil & dish	349.4
		Dish	107.9
Moisture Content =	4.4		

#### SIEVE ANALYSIS

Dry weight of total sample= 241.5

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	54.85	77.29%	77.3	19.0
3/8 inch	77.43	67.94%	67.9	9.5
# 4	114.85	52.44%	52.4	4.8
# 10	136.58	43.45%	43.4	2.0
# 20	151.89	37.11%	37.1	0.85
# 40	162.26	32.81%	32.8	0.43
# 60	171.24	29.09%	29.1	0.25
# 100	182.36	24.49%	24.5	0.15
# 200	198.93	17.63%	17.6	0.075

# MECHANICAL ANALYSIS

3-

DATE 8/20/92 BY LAF  
 JOB NUMBER -6221 OWNER/CLIENT Jm Montisomery  
 LOCATION \_\_\_\_\_  
 BORING CS-36 SAMPLE 002 DEPTH 0-0.2

NUMBER OF RINGS	<u>bag</u>	DISH	<u>308</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>360.0</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>349.4</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>107.9</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>4.4</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		<u>0</u>		
		3/4"		<u>54.85</u>		
		3/8"		<u>77.43</u>		
		#4		<u>114.85</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>136.58</u>			
		#20		<u>151.89</u>			
		#40		<u>162.26</u>			
		#60		<u>171.24</u>			
		#100		<u>182.36</u>			
		#200		<u>190.93</u>			
		PAN					
		TOTAL					



James M. Montgomery  
P.O. 2942-0130

Site ID	SB-29-018	Wt soil and dish	260.2
		Dry soil & dish	248.6
Depth	0-5 feet	Dish	109
Moisture Content =	8.3		

#### SIEVE ANALYSIS

Dry weight of total sample= 139.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	32.1	77.01%	77.0	9.5
# 4	58.1	58.38%	58.4	4.8
# 10	74	46.99%	47.0	2.0
# 20	83	40.54%	40.5	0.85
# 40	86	38.40%	38.4	0.43
# 60	87.7	37.18%	37.2	0.25
# 100	90	35.53%	35.5	0.15
# 200	94.5	32.31%	32.3	0.075

# MECHANICAL ANALYSIS

SA

DATE 9/3/92 BY LAF  
 JOB NUMBER -6081 OWNER/CLIENT Jm montzomery  
 LOCATION \_\_\_\_\_  
 BORING SB-29 SAMPLE D18 DEPTH 0-5'

NUMBER OF RINGS	<u>large</u>	DISH	<u>211</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>260.2</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>248.6</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>109.0</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>8.3</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		32.1		
		#4		58.1		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		74.0			
		#20		83.0			
		#40		86.0			
		#60		87.7			
		#100		90.0			
		#200		94.5			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO. 6081  
 CLIENT/OWNER JRM Montemayor  
 LOCATION SB-29 SAMPLE D14 DEPTH 0-5'

## FIELD DENSITY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

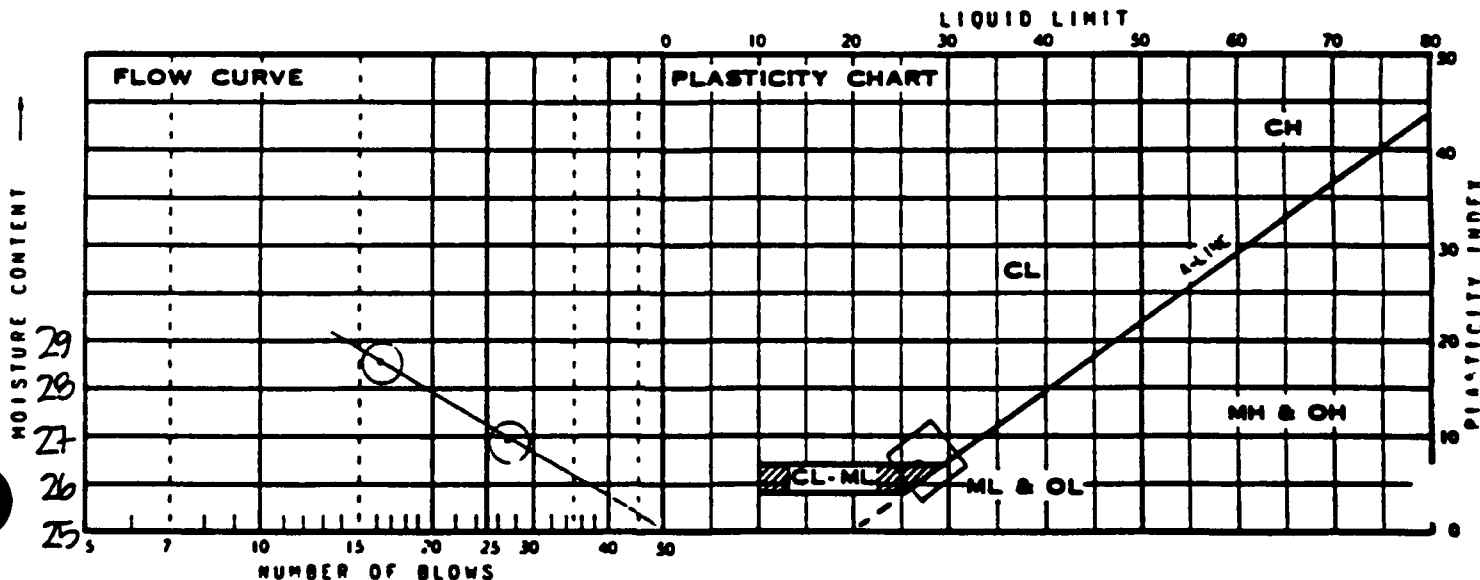
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9.9.92

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 102</u>	<u>AL 134</u>				
WT OF DISH + WET SOIL	<u>9.23</u>	<u>8.18</u>				
WT OF DISH + DRY SOIL	<u>7.92</u>	<u>7.06</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT	<u>20.09</u>	<u>19.79</u>	<u><math>\bar{x} = 20</math></u>			

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 90</u>	<u>AL 116</u>	<u>19</u>	<u>ONLY enough sample for 2 pts.</u>		
NUMBER OF BLOWS	<u>27</u>	<u>16</u>				
WT OF DISH + WET SOIL	<u>7.86</u>	<u>9.95</u>				
WT OF DISH + DRY SOIL	<u>6.49</u>	<u>8.05</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT	<u>26.92</u>	<u>28.57</u>				

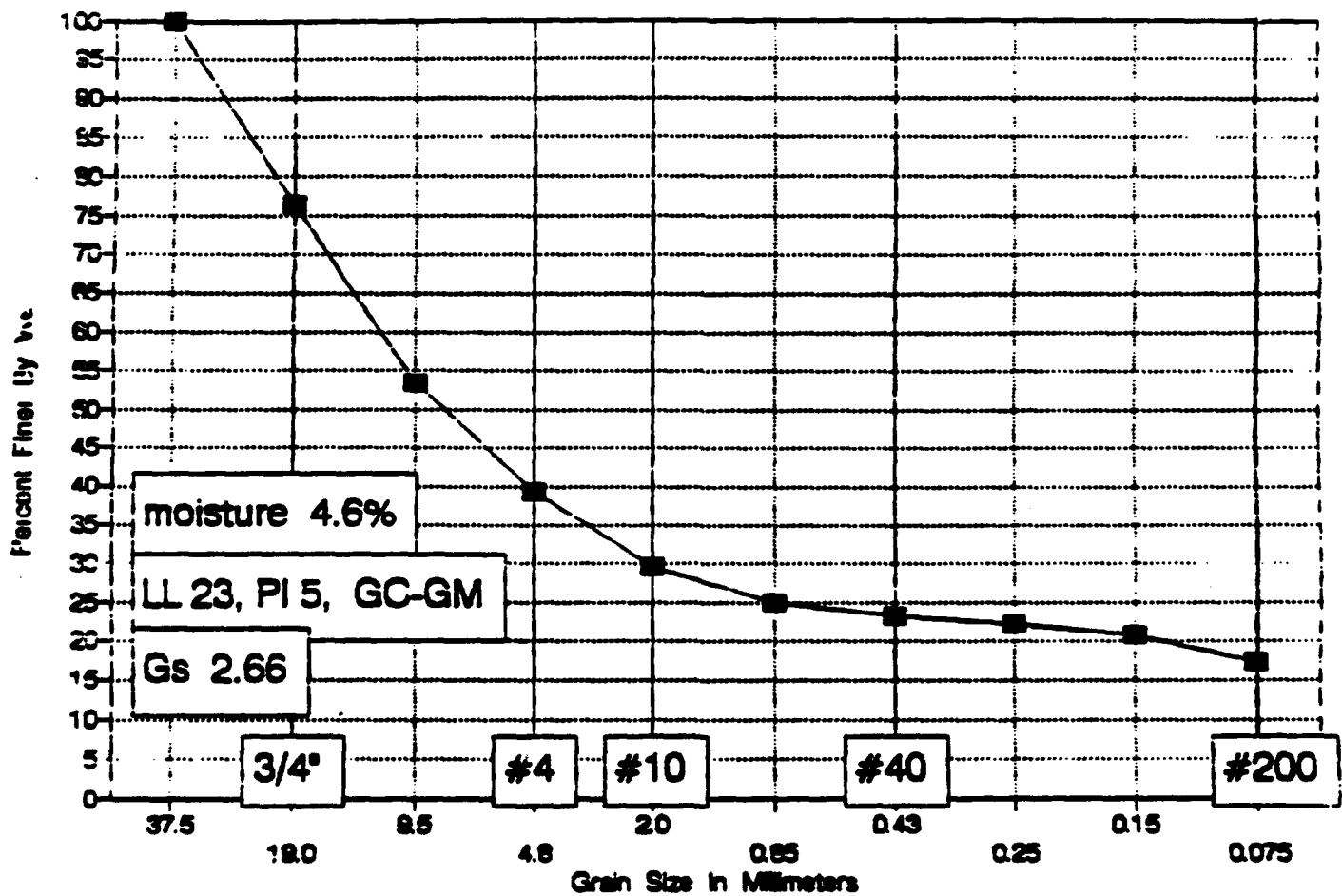


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		<u>27</u>	<u>20</u>	<u>7</u>	<u>CL-ML</u>

# GRADATION CURVE

Site SB-29-019, Sample at 0 to 5 feet



James M. Montgomery  
P.O. 2942-0130

Site ID SB-29-019

Depth- 0-5 feet

Moisture Content = 4.6

Wt soil and dish	287.2
Dry soil & dish	279.4
Dish	109.8

### SIEVE ANALYSIS

Dry weight of total sample= 169.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	40	76.42%	76.4	19.0
3/8 inch	79.1	53.36%	53.4	9.5
# 4	103	39.27%	39.3	4.8
# 10	119.4	29.60%	29.6	2.0
# 20	127.4	24.88%	24.9	0.85
# 40	130.1	23.29%	23.3	0.43
# 60	131.9	22.23%	22.2	0.25
# 100	134.4	20.75%	20.8	0.15
# 200	140.4	17.22%	17.2	0.075

# MECHANICAL ANALYSIS

54

DATE 9/3/92 BY LAF  
 JOB NUMBER -6081 OWNER/CLIENT Jm Montgomery  
 LOCATION \_\_\_\_\_  
 BORING CB-79 SAMPLE 019 DEPTH 0-5'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>313</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>287.2</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>279.4</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>109.8</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>46</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		0		
		3/4"		40.0		
		3/8"		79.1		
		#4		103.0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		119.4			
		#20		127.4			
		#40		130.1			
		#60		131.9			
		#100		134.4			
		#200		140.4			
		PAN					
		TOTAL					

LABORATORY CLASSIFICATION

LOCATION

BORING **SB-29** SAMPLE **013** DEPTH **C-5**

FIELD DENSITY 3' - - - - - / - - / - -

THIS IS AN 1/8-INCH THREAD

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	_____	_____
WT OF MOISTURE		
WT OF DISH	_____	_____
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LA F 99.92

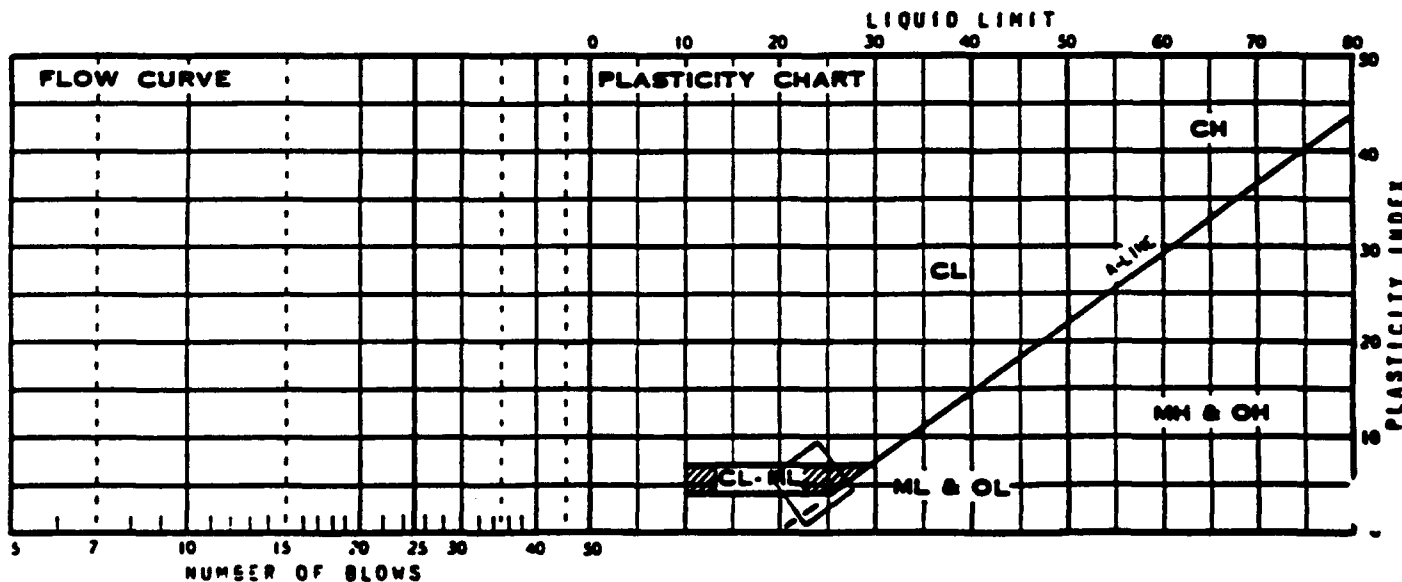
- small sample -

DETERMINATION	1	2	3	4	5	6
DISH	A-4	AL 34				
WT OF DISH + WET SOIL	13.24	11.80				
WT OF DISH + DRY SOIL	11.42	10.21	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	18.16	18.05	$\bar{V} = 18$			

**LIQUID LIMIT**

$$L_L = K(W_N) \quad \begin{matrix} K = \text{factor (table)} \\ W_N = \text{moisture content} \end{matrix}$$

DETERMINATION	1	2	3	4	5	6
DISH	ALB3	A-6	611	only 1 sample		
NUMBER OF BLOWS	26			40 (est)		
WT OF DISH + WET SOIL	11.19			1 pt.		
WT OF DISH + DRY SOIL	9.38					
WT OF MOISTURE				U	$= (1.003)(22.68)$	
WT OF DISH	1.4	1.4	1.4		$= 22.69$	
WT OF DRY SOIL						
MOISTURE CONTENT	22.68					

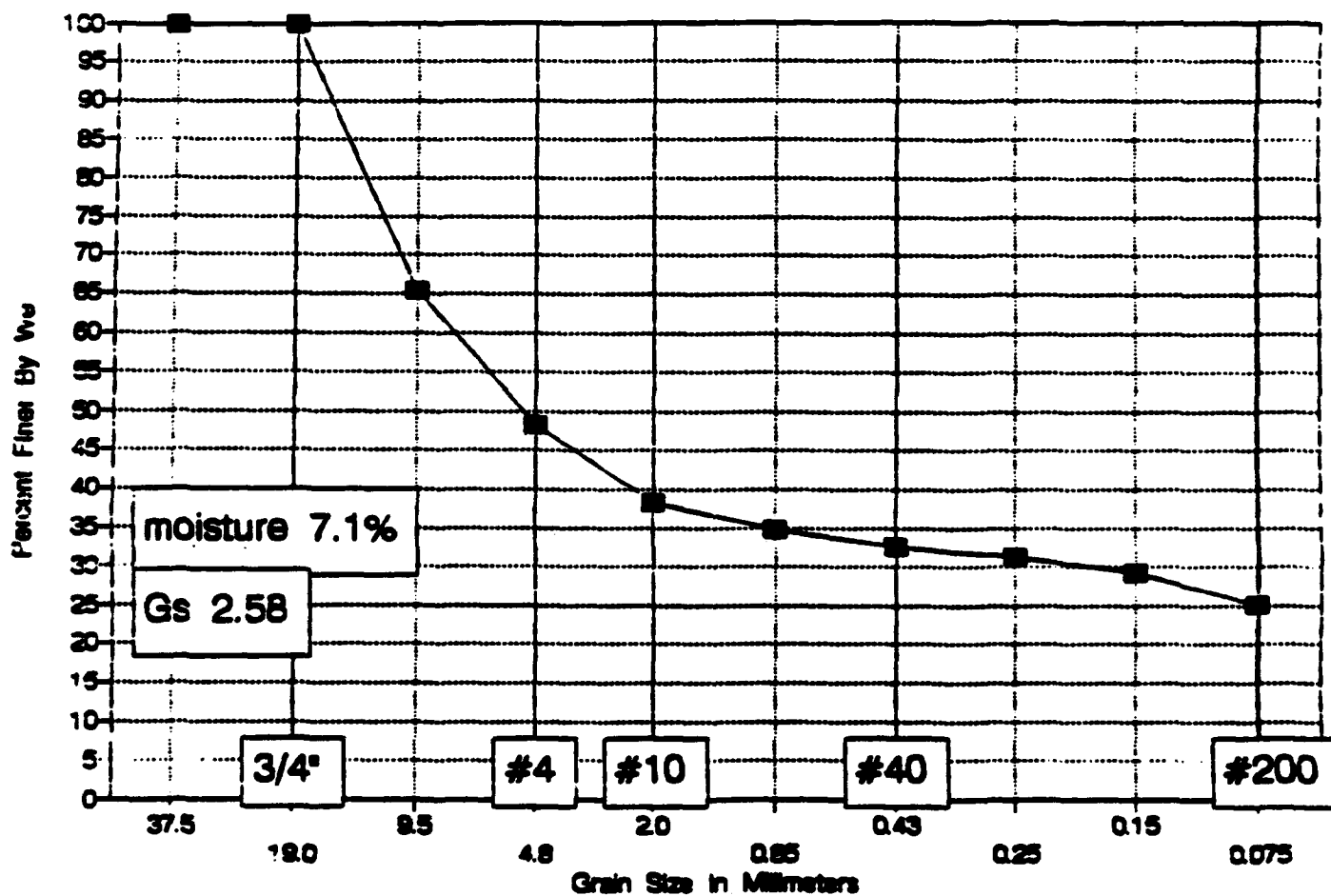


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		23	18	5	CL-ML

# GRADATION CURVE

Site SB-29-020, Sample at 0 to 5 feet





James M. Montgomery  
P.O. 2942-0130

Site ID	SB-29-020	Wt soil and dish	242.8
		Dry soil & dish	234.1
Depth	0-5 feet	Dish	111.8
Moisture Content =	7.1		

#### SIEVE ANALYSIS

Dry weight of total sample= 122.3

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	42.3	65.41%	65.4	9.5
# 4	63.4	48.16%	48.2	4.8
# 10	75.4	38.35%	38.3	2.0
# 20	79.7	34.83%	34.8	0.85
# 40	82.5	32.54%	32.5	0.43
# 60	84.1	31.23%	31.2	0.25
# 100	86.6	29.19%	29.2	0.15
# 200	91.5	25.18%	25.2	0.075

# MECHANICAL ANALYSIS

SA  
\* 170 PI

DATE 9/14/92

BY LAF

JOB NUMBER -6061

OWNER/CLIENT Jmmontsomery

LOCATION \_\_\_\_\_

BORING GB-29

SAMPLE 020

DEPTH 0-5'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>216</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>242.8</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>234.1</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>111.8</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>7.1</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		42.3		
		#4		63.4		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		75.4			
		#20		79.7			
		#40		82.5			
		#60		84.1			
		#100		86.6			
		#200		91.5			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. 251  
CLIENT/OWNER UNITED STATES ARMY  
LOCATION \_\_\_\_\_  
BORING SB-29 SAMPLE 020 DEPTH 0-5'

FIELD DENSITY                     

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

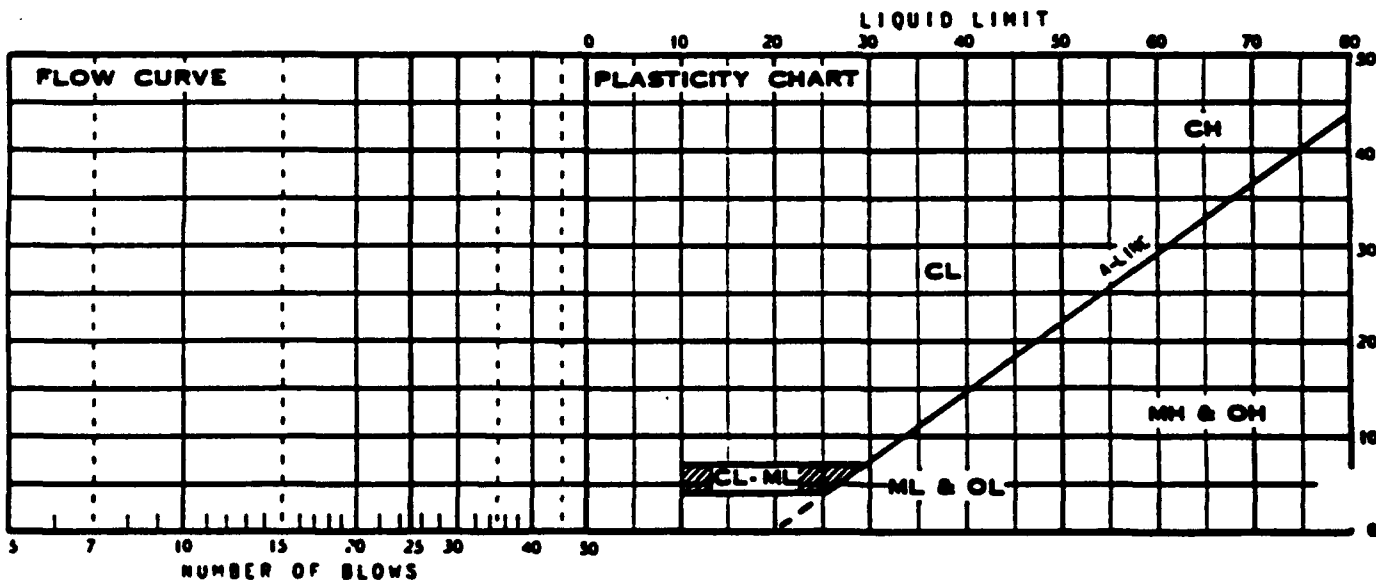
PLASTIC LIMIT BY LCIF                     

DETERMINATION	1	2	3	4	5	6
DISH						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH						
WT OF DRY SOIL						
MOISTURE CONTENT						

*could not run test  
not enough sample  
(gravel)  
→ not enough < 40*

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH						
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH						
WT OF DRY SOIL						
MOISTURE CONTENT						



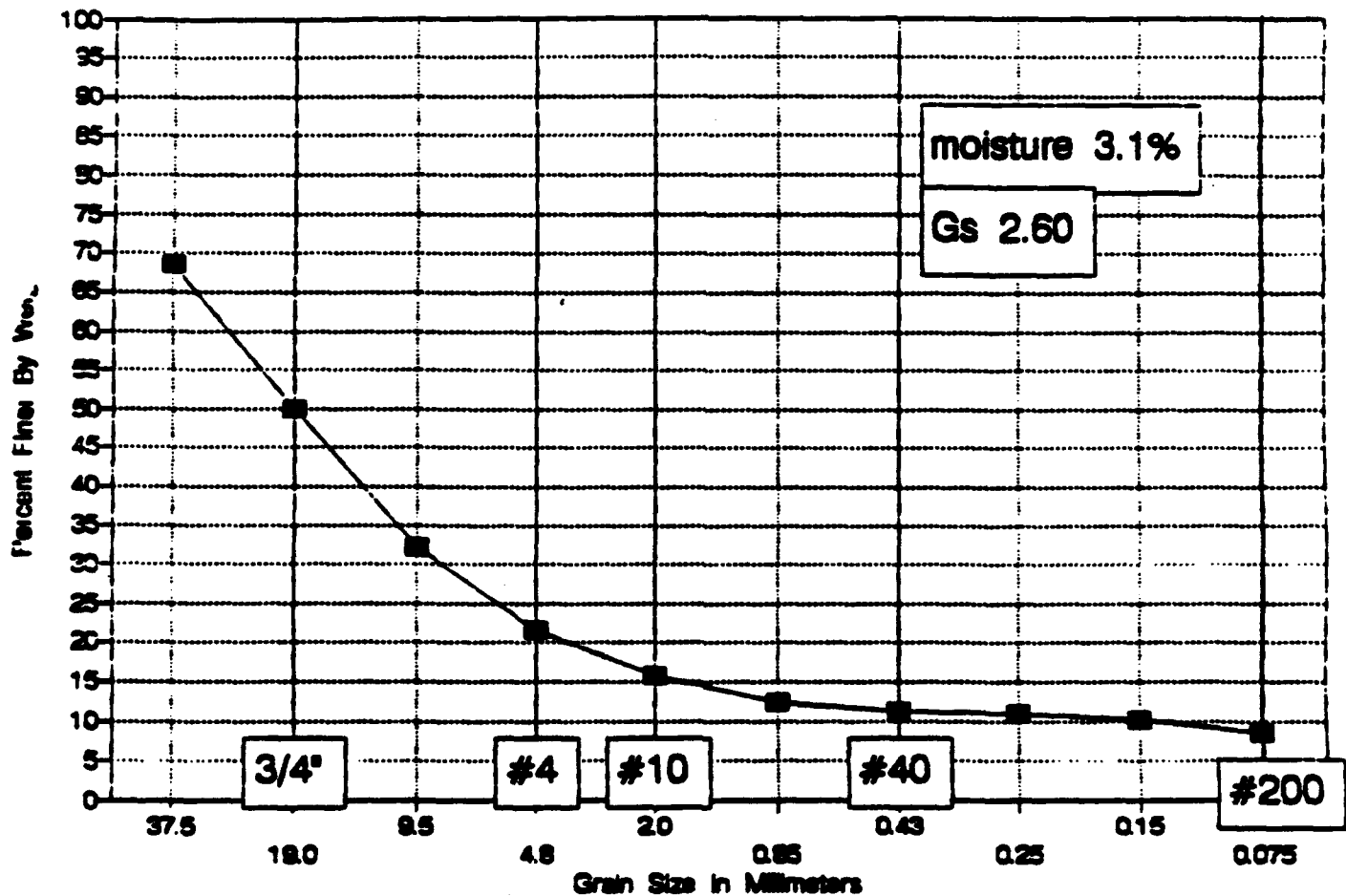
SUMMARY

*DID NOT RUN TEST*

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION

# GRADATION CURVE

Site SB-29-022, Sample at 0 to 5 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	SB-29-022	Wt soil and dish	323.3
		Dry soil & dish	316.8
Depth	0-5 feet	Dish	109.9
Moisture Content =	3.1		

#### SIEVE ANALYSIS

Dry weight of total sample= 206.9

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	65.1	68.54%	68.5	37.5
3/4 inch	103.5	49.98%	50.0	19.0
3/8 inch	140.5	32.09%	32.1	9.5
# 4	162.5	21.46%	21.5	4.8
# 10	174.4	15.71%	15.7	2.0
# 20	181.4	12.32%	12.3	0.85
# 40	183.4	11.36%	11.4	0.43
# 60	184.4	10.87%	10.9	0.25
# 100	185.8	10.20%	10.2	0.15
# 200	189.2	8.55%	8.6	0.075

# MECHANICAL ANALYSIS

S+  
\*no PI

DATE 9/14/92

BY LAF

JOB NUMBER -6081

OWNER/CLIENT Jm Montgomery

LOCATION \_\_\_\_\_

BORING SB-29

SAMPLE 022

DEPTH 0-5'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>212</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>323.3</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>316.8</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>109.9</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>3.1</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"		0		
		1-1/2"		65.1		
		3/4"		103.5		
		3/8"		140.5		
		#4		162.5		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		174.4			
		#20		181.4			
		#40		183.4			
		#60		184.4			
		#100		185.8			
		#200		189.2			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

FIELD DENSITY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

JOB NO.

CLIENT/OWNER

LOCATION

BORING GB-29 SAMPLE 022 DEPTH 0-5'

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

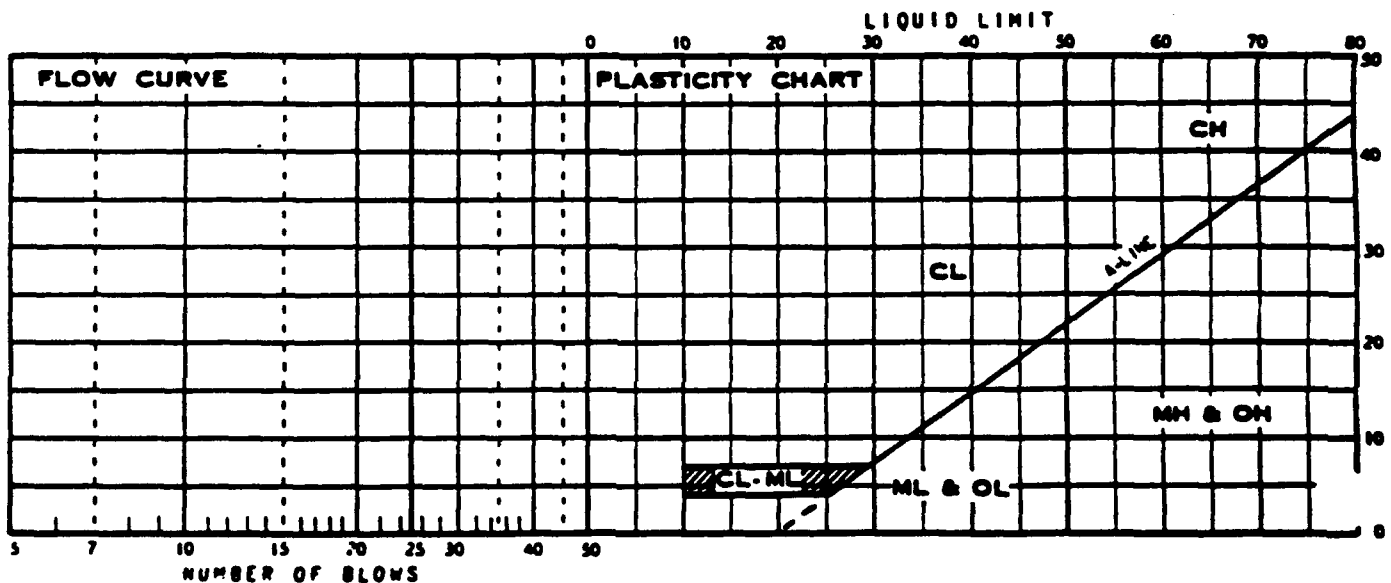
PLASTIC LIMIT BY LAF

DETERMINATION	1	2	3	4	5	6
DISH						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH						
WT OF DRY SOIL						
MOISTURE CONTENT						

could not run test  
- not enough sample  
(GRAVEL)

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH						
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH						
WT OF DRY SOIL						
MOISTURE CONTENT						



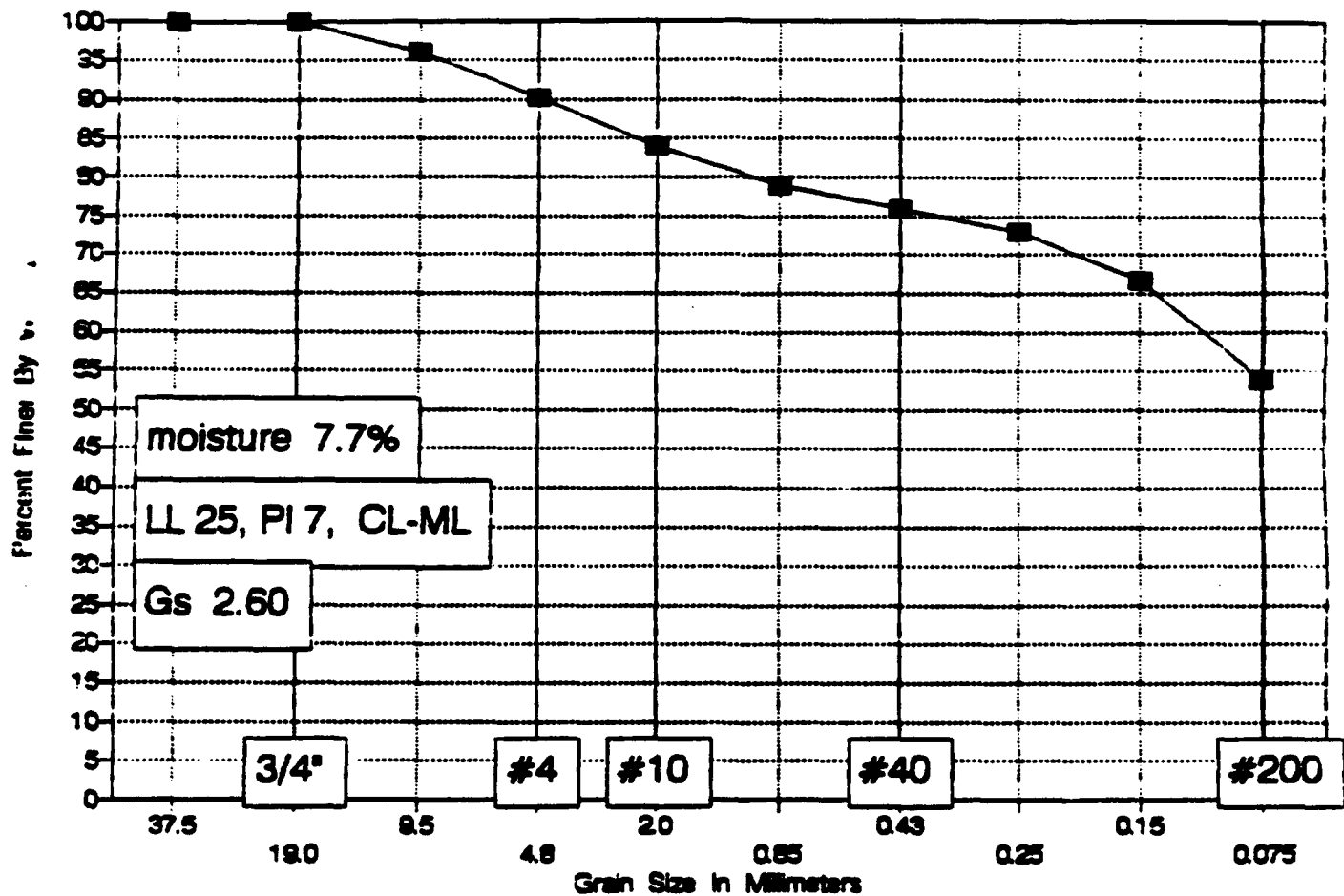
## SUMMARY

DID NOT RUN TEST

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION

# GRADATION CURVE

Site SB-29-029, Sample at 0 to 5 feet





James M. Montgomery  
P.O. 2942-0130

Site ID	SB-29-029	Wt soil and dish	197.5
Depth	0-5 feet	Dry soil & dish	190.9
		Dish	105.3
Moisture Content =	7.7		

#### SIEVE ANALYSIS

Dry weight of total sample= 85.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	3.4	96.03%	96.0	9.5
# 4	8.4	90.19%	90.2	4.8
# 10	13.6	84.11%	84.1	2.0
# 20	17.9	79.09%	79.1	0.85
# 40	20.6	75.93%	75.9	0.43
# 60	23	73.13%	73.1	0.25
# 100	28.5	66.71%	66.7	0.15
# 200	39.5	53.86%	53.9	0.075

# MECHANICAL ANALYSIS

GA

DATE 9/3/92 BY LAF  
 JOB NUMBER -606i OWNER/CLIENT ummonisomery  
 LOCATION \_\_\_\_\_  
 BORING GB-29 SAMPLE 029 DEPTH 0-5'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>9</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>197.5</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>190.9</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>105.3</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>7.7</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		<u>0</u>		
		3/8"		<u>3.4</u>		
		#4		<u>8.4</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>13.6</u>			
		#20		<u>17.9</u>			
		#40		<u>20.6</u>			
		#60		<u>23.0</u>			
		#100		<u>28.5</u>			
		#200		<u>39.5</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. 10081  
CLIENT/OWNER JM MORTIMER  
LOCATION \_\_\_\_\_  
BORING SB-29 SAMPLE 029 DEPTH 0-5

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	_____	_____
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

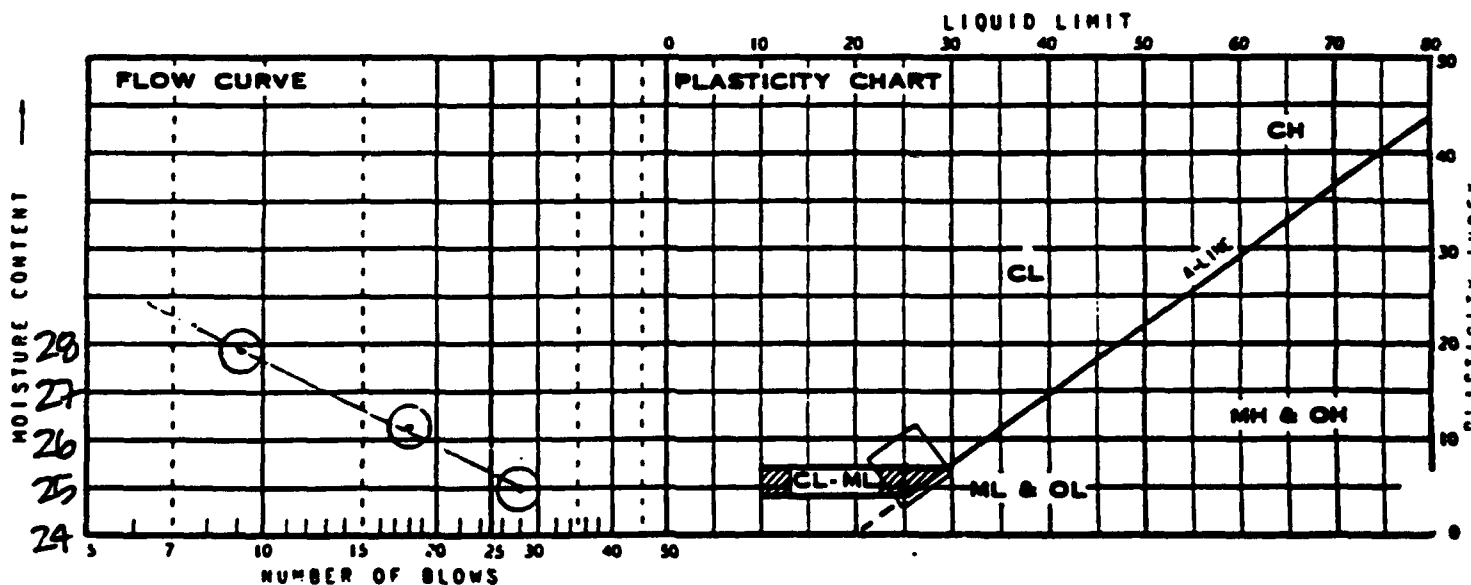
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	_____	_____
WT OF MOISTURE		
WT OF DISH	_____	_____
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE.02902

DETERMINATION	1	2	3	4	5	6
DISH	<u>13</u>	<u>20</u>				
WT OF DISH + WET SOIL	<u>12.47</u>	<u>14.82</u>				
WT OF DISH + DRY SOIL	<u>10.80</u>	<u>12.78</u>	_____	_____	_____	_____
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	_____	_____	_____	_____
WT OF DRY SOIL						
MOISTURE CONTENT	<u>17.77</u>	<u>17.93</u>	<u>X=18</u>			

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL109</u>	<u>183</u>	<u>9A</u>			
NUMBER OF BLOWS	<u>28</u>	<u>18</u>	<u>9</u>			
WT OF DISH + WET SOIL	<u>11.45</u>	<u>11.54</u>	<u>11.76</u>			
WT OF DISH + DRY SOIL	<u>9.44</u>	<u>9.43</u>	<u>9.50</u>	_____	_____	_____
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>	_____	_____	_____
WT OF DRY SOIL						
MOISTURE CONTENT	<u>25.00</u>	<u>26.28</u>	<u>27.90</u>			

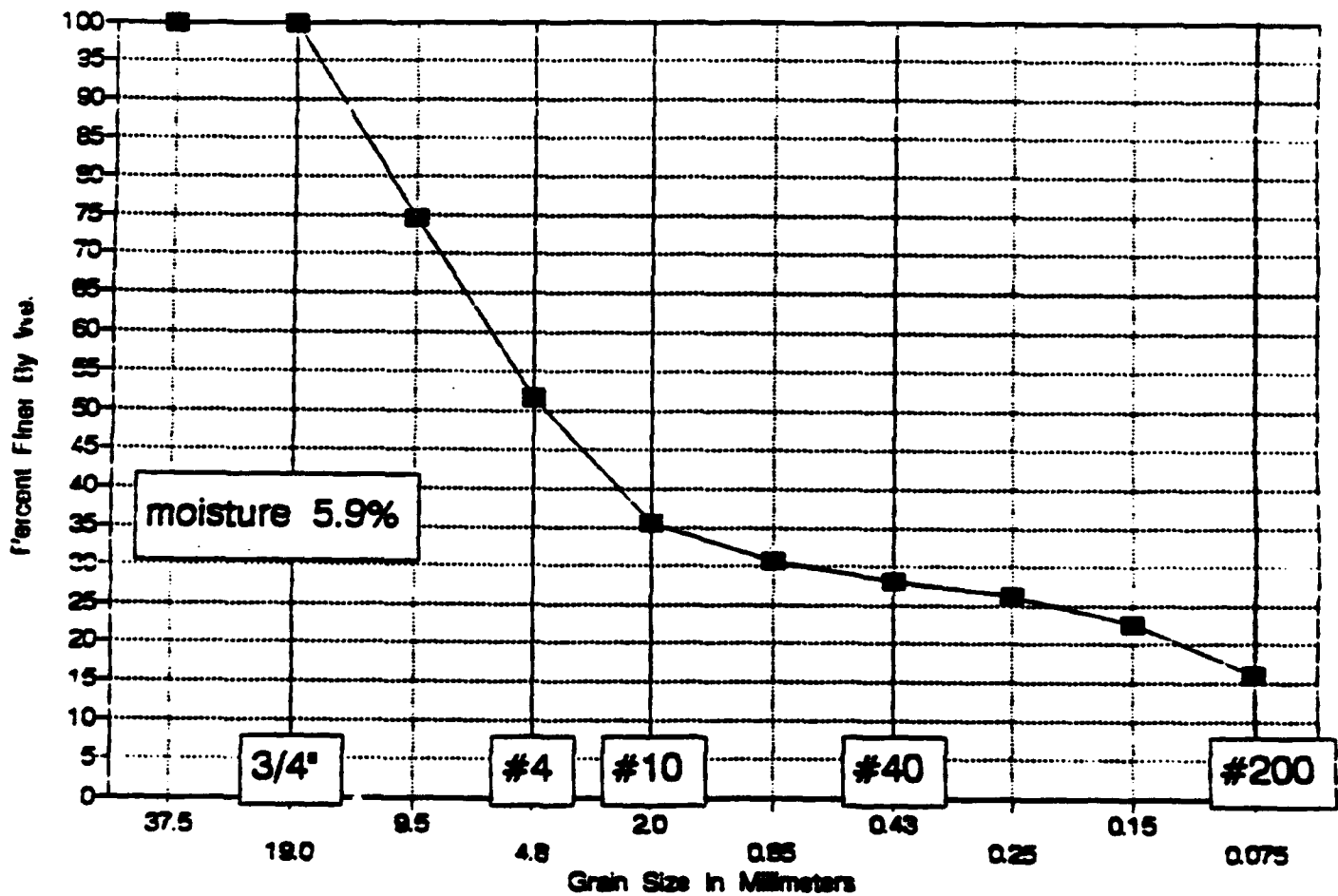


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		<u>25</u>	<u>18</u>	<u>7</u>	<u>CL-ML</u>

# GRADATION CURVE

Site SB-29-034, Sample at 0 to 5 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	SB-29-034	Wt soil and dish	246.9
		Dry soil & dish	239.2
Depth	0-5 feet	Dish	108.2
Moisture Content =	5.9		

#### SIEVE ANALYSIS

Dry weight of total sample= 131

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	33.3	74.58%	74.6	9.5
# 4	63.4	51.60%	51.6	4.8
# 10	84.4	35.57%	35.6	2.0
# 20	90.9	30.61%	30.6	0.85
# 40	94.1	28.17%	28.2	0.43
# 60	96.7	26.18%	26.2	0.25
# 100	101.3	22.67%	22.7	0.15
# 200	110.2	15.88%	15.9	0.075

# MECHANICAL ANALYSIS

SA

\* no PI  
\* 170 SPECIFIC GRAVITY

DATE 9/3/92

BY LAF

JOB NUMBER - 6081

OWNER/CLIENT JM Montgomery

LOCATION \_\_\_\_\_

BORING SB-29

SAMPLE 034

DEPTH 0-5'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>308</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>246.9</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>239.2</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>108.2</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>59</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		<u>0</u>		
		3/8"		<u>33.3</u>		
		#4		<u>63.4</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>84.4</u>			
		#20		<u>90.9</u>			
		#40		<u>94.1</u>			
		#60		<u>96.7</u>			
		#100		<u>101.3</u>			
		#200		<u>110.2</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO. 1001  
 CLIENT/OWNER JH Martiney  
 LOCATION 38-20 SAMPLE 034 DEPTH 0-5'

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

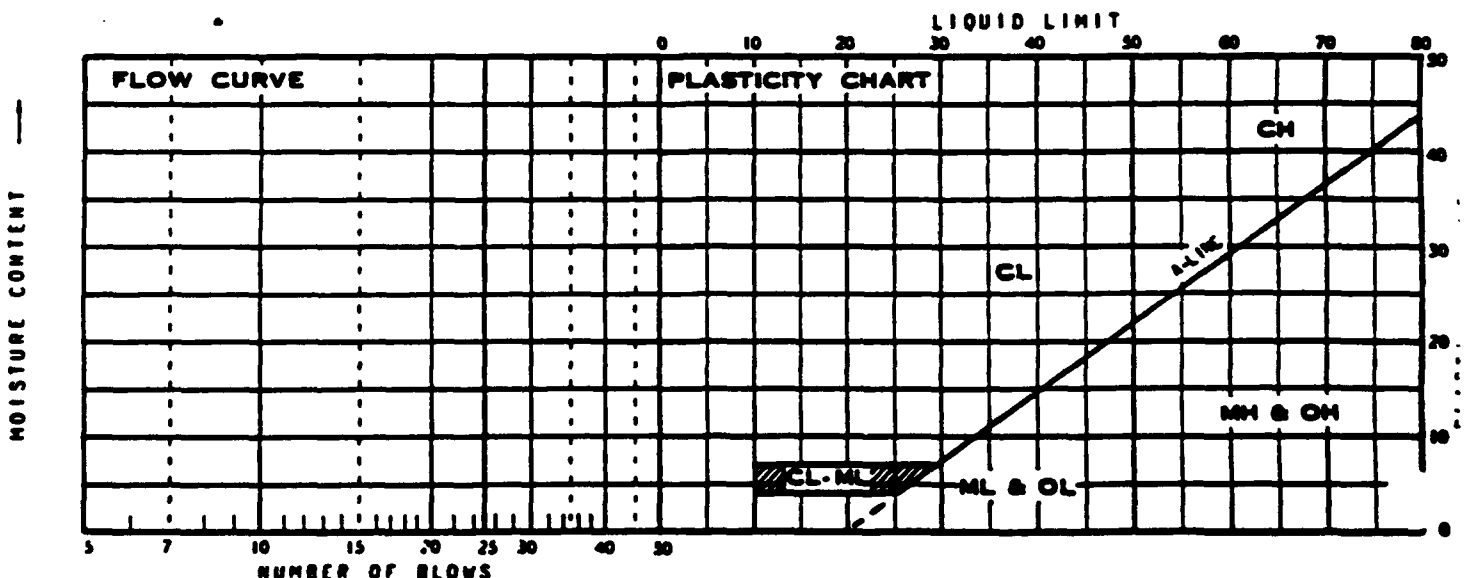
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF

DETERMINATION	1	2	3	4	5	6
DISH	could not run test - not enough sample (GRAVEL)					
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH						
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH						
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH						
WT OF DRY SOIL						
MOISTURE CONTENT						



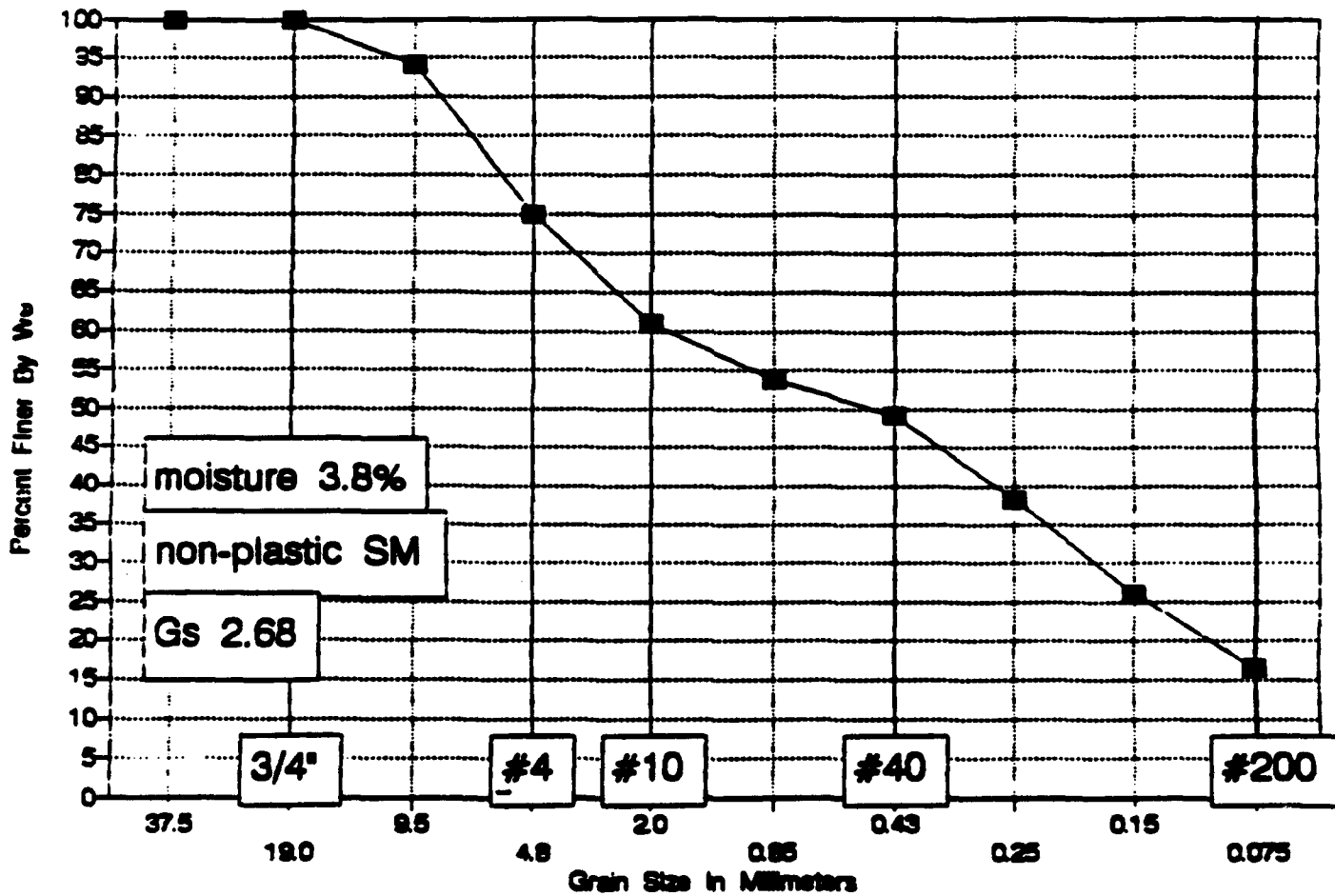
SUMMARY

DID NOT RUN TEST

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION

# GRADATION CURVE

Site SB-42-002, Sample at 2 to 4 feet





James M. Montgomery  
P.O. 2942-0130

Site ID	SB-42-002	Wt soil and dish	263.2
		Dry soil & dish	257.7
Depth	2-4 feet	Dish	111.7
Moisture Content =	3.8		

#### SIEVE ANALYSIS

Dry weight of total sample= 146

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	8.6	94.11%	94.1	9.5
# 4	36.7	74.86%	74.9	4.8
# 10	57	60.96%	61.0	2.0
# 20	67.3	53.90%	53.9	0.85
# 40	74.3	49.11%	49.1	0.43
# 60	89.9	38.42%	38.4	0.25
# 100	108.1	25.96%	26.0	0.15
# 200	121.9	16.51%	16.5	0.075

# MECHANICAL ANALYSIS

5A

DATE 9/10/92 BY LAF  
 JOB NUMBER -6021 OWNER/CLIENT JM Montgomery  
 LOCATION \_\_\_\_\_  
 BORING GB-42 SAMPLE 002 DEPTH 2-4'

NUMBER OF RINGS	<u>log</u>	DISH	<u>302</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>263.2</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>257.7</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>111.7</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>3.8</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		86		
		#4		36.7		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		57.0			
		#20		67.3			
		#40		74.3			
		#60		89.9			
		#100		108.1			
		#200		121.9			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
 LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. - 6051  
 CLIENT/OWNER JM MICH-SOIL  
 LOCATION \_\_\_\_\_  
 BORING GB-42 SAMPLE 002 DEPTH 2-4'

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

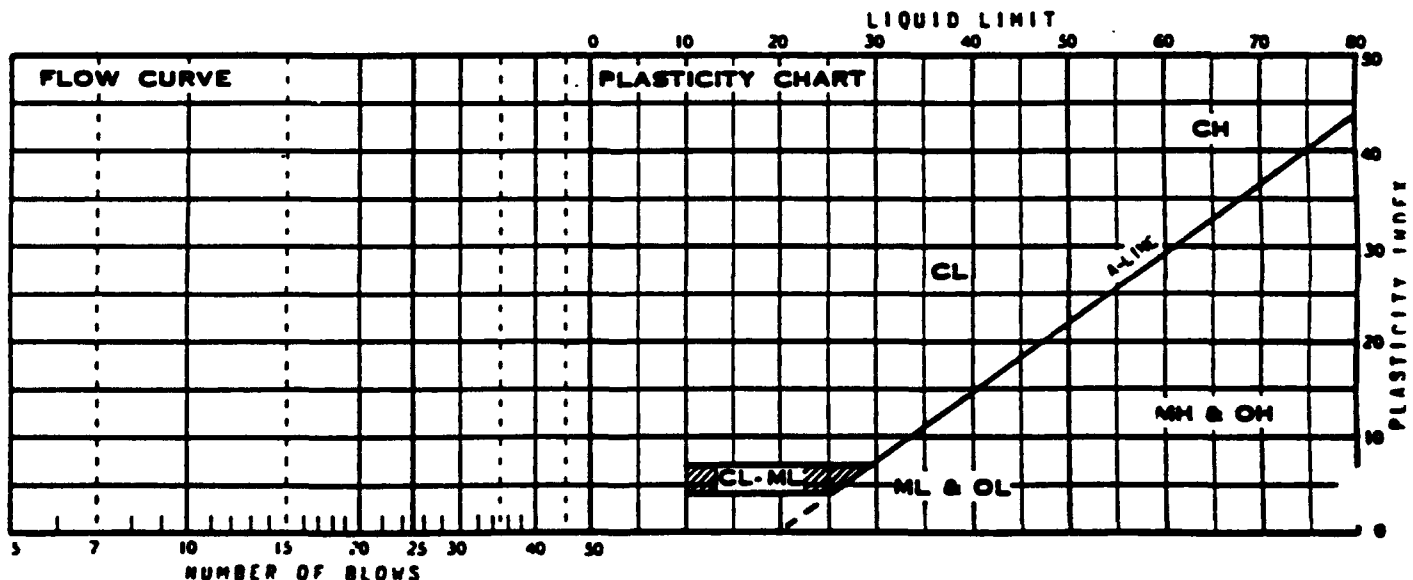
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LA-91492

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 120</u>	<u>AL 5</u>	<u>could not thread (any)</u>			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 114</u>	<u>AL 93</u>	<u>AL 11</u>	<u>could not get adequate blow count (25)</u>		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						

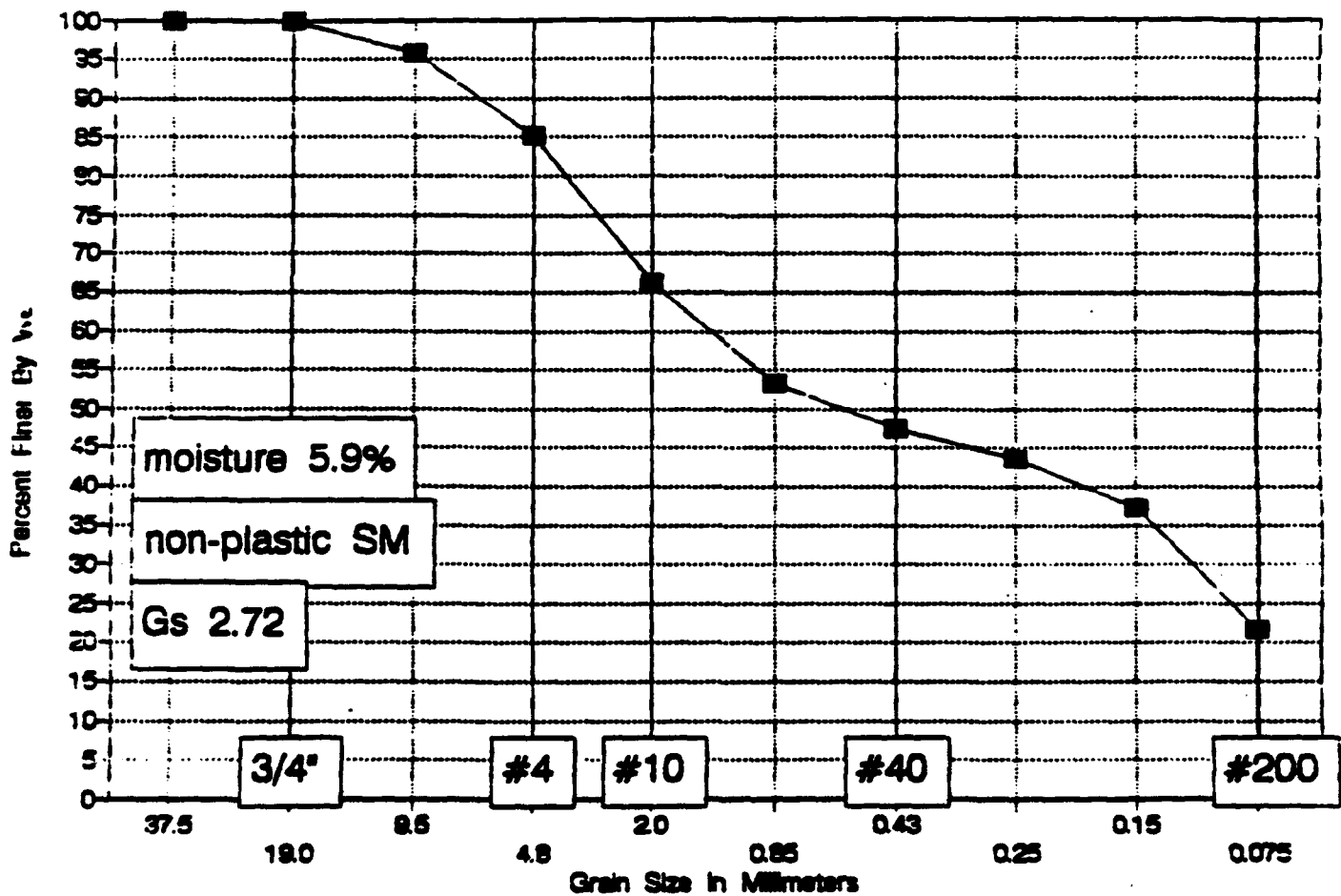


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site SB-42-006, Sample at 2 to 4 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	SB-42-006	Wt soil and dish	202.1
		Dry soil & dish	196.7
Depth	2-4 feet	Dish	104.7
Moisture Content =	5.9		

#### SIEVE ANALYSIS

Dry weight of total sample= 92

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	3.8	95.87%	95.9	9.5
# 4	13.7	85.11%	85.1	4.8
# 10	30.9	66.41%	66.4	2.0
# 20	43	53.26%	53.3	0.85
# 40	48.4	47.39%	47.4	0.43
# 60	52	43.48%	43.5	0.25
# 100	57.8	37.17%	37.2	0.15
# 200	72.2	21.52%	21.5	0.075

# MECHANICAL ANALYSIS

SA

DATE 9/14/92 BY LAF  
 JOB NUMBER -6051 OWNER/CLIENT Jm montgomery  
 LOCATION \_\_\_\_\_  
 BORING SB-42 SAMPLE 006 DEPTH 2-4'

NUMBER OF RINGS	<u>dry</u>	DISH	<u>86</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>202.1</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>196.7</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>104.7</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>5.9</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		3.8		
		#4		13.7		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUML WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		30.9			
		#20		43.0			
		#40		48.4			
		#60		52.0			
		#100		57.8			
		#200		72.2			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. - 0001  
CLIENT/OWNER Jim Montisomery  
LOCATION \_\_\_\_\_  
BORING SB-42 SAMPLE 006 DEPTH 2-4'

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

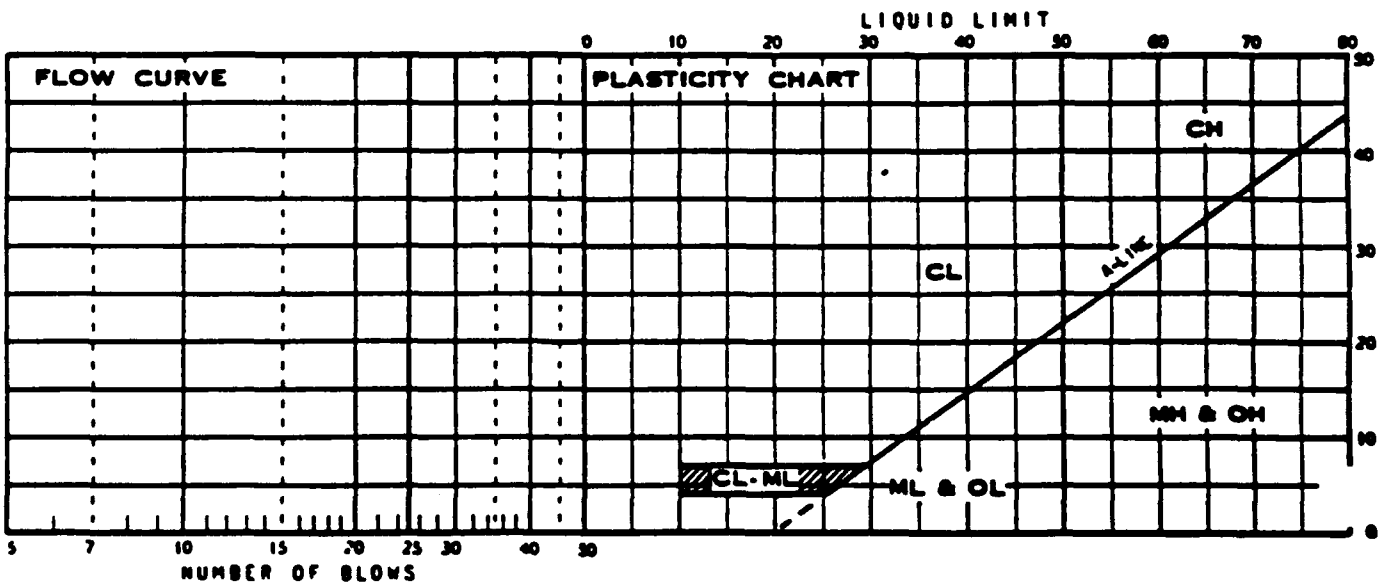
PLASTIC LIMIT BY LA.F. 91992

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL110</u>	<u>AL96</u>	<u>could not thread</u>			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT						

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL122</u>	<u>A6</u>	<u>65</u>	<u>could not get adequate blow count</u>		
NUMBER OF BLOWS					<u>(25)</u>	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						

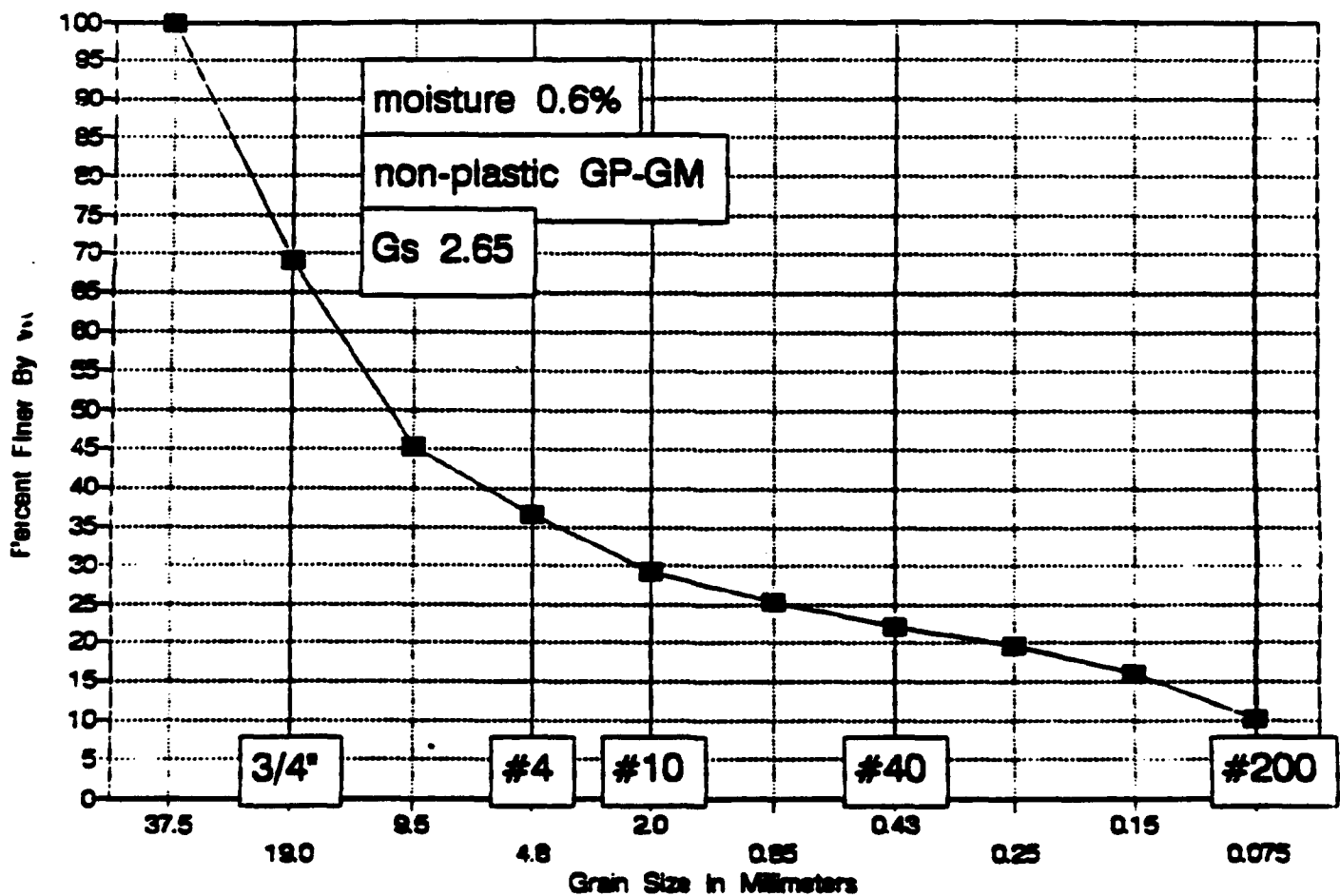


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site SB-42-011, Sample at 2 to 4.5 feet





James M. Montgomery  
P.O. 2942-0130

Site ID	SB-42-011	Wt soil and dish	316.8
		Dry soil & dish	315.6
Depth	2-4.5 feet	Dish	108.7
Moisture Content =	0.6		

#### SIEVE ANALYSIS

Dry weight of total sample= 206.9

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	64	69.07%	69.1	19.0
3/8 inch	113.4	45.19%	45.2	9.5
# 4	131.1	36.64%	36.6	4.8
# 10	146.4	29.24%	29.2	2.0
# 20	154.7	25.23%	25.2	0.85
# 40	161	22.18%	22.2	0.43
# 60	166	19.77%	19.8	0.25
# 100	174	15.90%	15.9	0.15
# 200	186	10.10%	10.1	0.075

SA

## MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF  
 JOB NUMBER -6001 OWNER/CLIENT JM Montgomery  
 LOCATION \_\_\_\_\_  
 BORING SB-42 SAMPLE O11 DEPTH 2-45'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>201</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>316.8</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>315.6</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>100.7</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>0.6</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		<u>64.0</u>		
		3/8"		<u>113.4</u>		
		#4		<u>131.1</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>146.4</u>			
		#20		<u>154.7</u>			
		#40		<u>161.0</u>			
		#60		<u>166.0</u>			
		#100		<u>174.0</u>			
		#200		<u>186.0</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
LABORATORY CLASSIFICATION \_\_\_\_\_

FIELD DENSITY BY \_\_\_\_\_

JOB NO. - 6051  
CLIENT/OWNER JOHN HARTMAN  
LOCATION \_\_\_\_\_  
BORING SB-42 SAMPLE 011 DEPTH 2-45

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

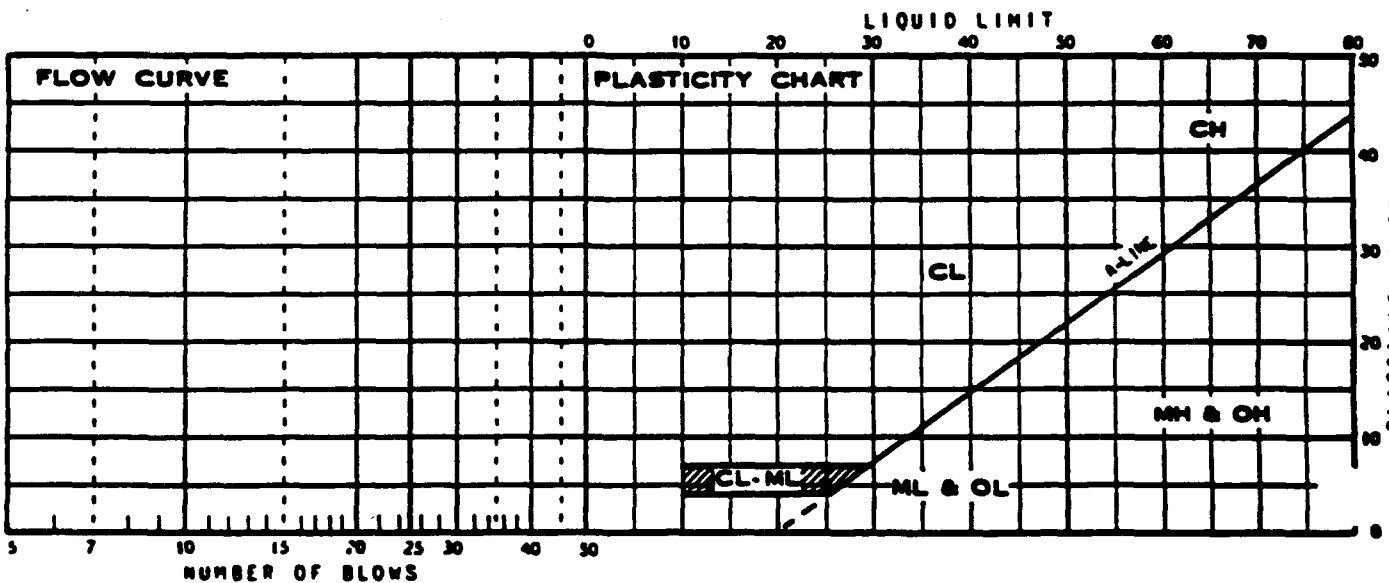
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9.8.92

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 120</u>	<u>AL 103</u>	<u>could not thread</u>			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT						

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 132</u>	<u>AL 129</u>	<u>AL 125</u>	<u>could not get adequate blow count (25)</u>		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						

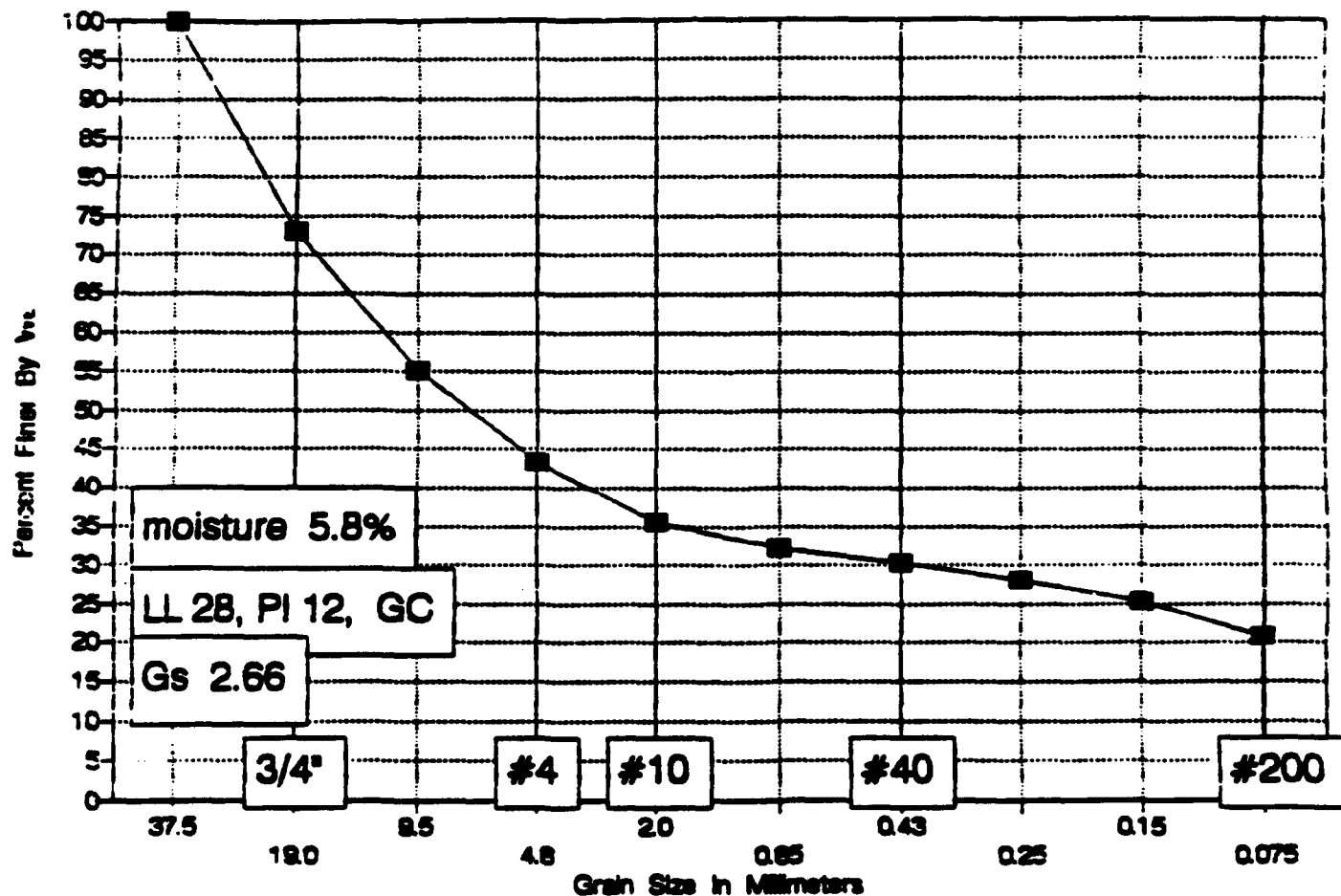


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site SB-46-014, Sample at 1 to 1.2 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	SB-46-014	Wt soil and dish	342.4
Depth	1-1.2 feet	Dry soil & dish	329.7
		Dish	109.2
Moisture Content =	5.8		

#### SIEVE ANALYSIS

Dry weight of total sample= 220.5

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	59.36	73.08%	73.1	19.0
3/8 inch	98.97	55.12%	55.1	9.5
# 4	124.95	43.33%	43.3	4.8
# 10	142.14	35.54%	35.5	2.0
# 20	149.48	32.21%	32.2	0.85
# 40	153.77	30.26%	30.3	0.43
# 60	158.43	28.15%	28.1	0.25
# 100	164.77	25.27%	25.3	0.15
# 200	174.72	20.76%	20.8	0.075

# MECHANICAL ANALYSIS

5A

DATE 9/20/12 BY LAF  
 JOB NUMBER -6081 OWNER/CLIENT dm martinsomery  
 LOCATION \_\_\_\_\_  
 BORING SB-46 SAMPLE 014 DEPTH 1-1.2'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>211</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>342.4</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>329.7</u>
WT. OF WET SOIL		WT. OF MOISTURE	<u>109.2</u>
FIELD DENSITY		WT. OF DISH	
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>5.8</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		0		
		3/4"		59.36		
		3/8"		98.97		
		#4		124.95		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUML WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		142.14			
		#20		149.48			
		#40		153.77			
		#60		158.43			
		#100		164.77			
		#200		174.72			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

FIELD DENSITY BY

JOB NO.

CLIENT/OWNER

LOCATION

BORING 38-46 SAMPLE 014 DEPTH 1-1.2'

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

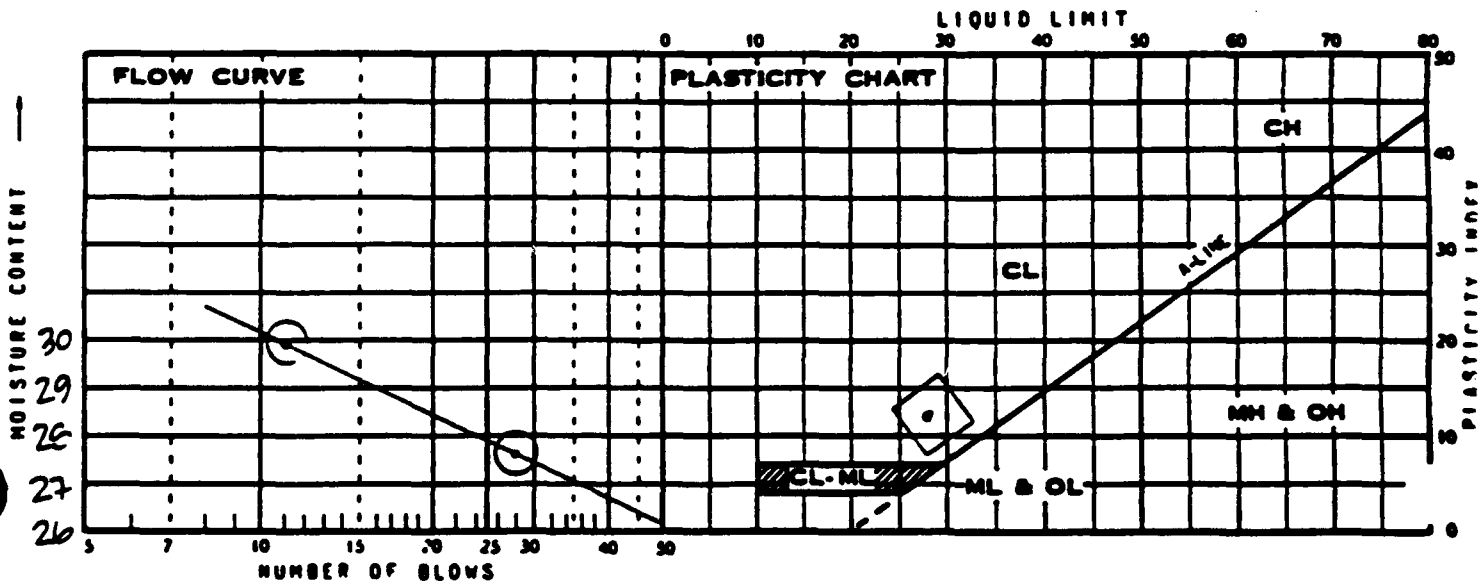
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LOF 82422

DETERMINATION	1	2	3	4	5	6
DISH	AL124	AL82				
WT OF DISH + WET SOIL	9.52	10.16				
WT OF DISH + DRY SOIL	8.41	8.95				
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT	15.83	16.03	$\bar{x} = 16$			

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	A-2	AL107	AL132	ONLY enough sample for 2 points		
NUMBER OF BLOWS	28	11				
WT OF DISH + WET SOIL	10.35	13.17				
WT OF DISH + DRY SOIL	8.41	10.46				
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT	27.67	29.91				

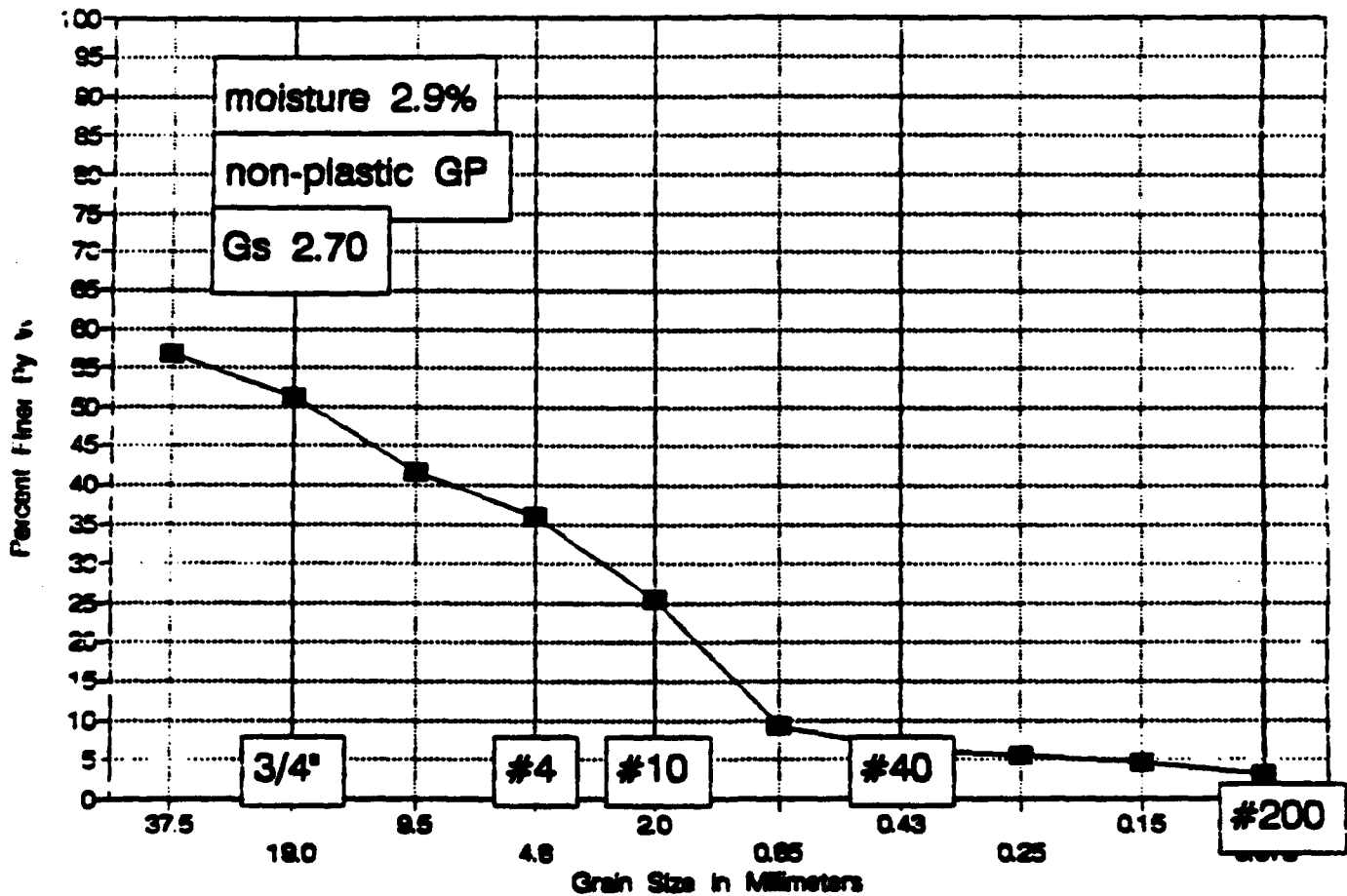


## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		28	16	12	CL

# GRADATION CURVE

Site SB-46-015, Sample at 1 to 1.2 feet





James M. Montgomery  
P.O. 2942-0130

Site ID	SB-46-015	Wt soil and dish	425.7
Depth,	1-1.2 feet	Dry soil & dish	416.7
		Dish	107.8
Moisture Content =	2.9		

#### SIEVE ANALYSIS

Dry weight of total sample= 308.9

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	133.31	56.84%	56.8	37.5
3/4 inch	150.75	51.20%	51.2	19.0
3/8 inch	180.03	41.72%	41.7	9.5
# 4	197.68	36.01%	36.0	4.8
# 10	230.35	25.43%	25.4	2.0
# 20	280.66	9.14%	9.1	0.85
# 40	289.36	6.33%	6.3	0.43
# 60	291.95	5.49%	5.5	0.25
# 100	294.91	4.53%	4.5	0.15
# 200	299.58	3.02%	3.0	0.075

# MECHANICAL ANALYSIS

54

DATE 8/20/92 BY LA  
 JOB NUMBER -6081 OWNER/CLIENT JM Montemayor  
 LOCATION \_\_\_\_\_  
 BORING GB-46 SAMPLE 015 DEPTH 1-1.2'

NUMBER OF RINGS	<u>dry</u>	DISH	<u>50</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>425.7</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>416.7</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>107.8</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>2.9</u>

WASH SEIVE \_\_\_\_\_ DRY SEIVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"		0		
		1-1/2"		133.31		
		3/4"		150.75		
		3/8"		180.03		
		#4		197.68		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		230.35			
		#20		280.66			
		#40		289.36			
		#60		291.95			
		#100		294.91			
		#200		299.56			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING 35-46 SAMPLE 015 DEPTH 1-1.2'

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

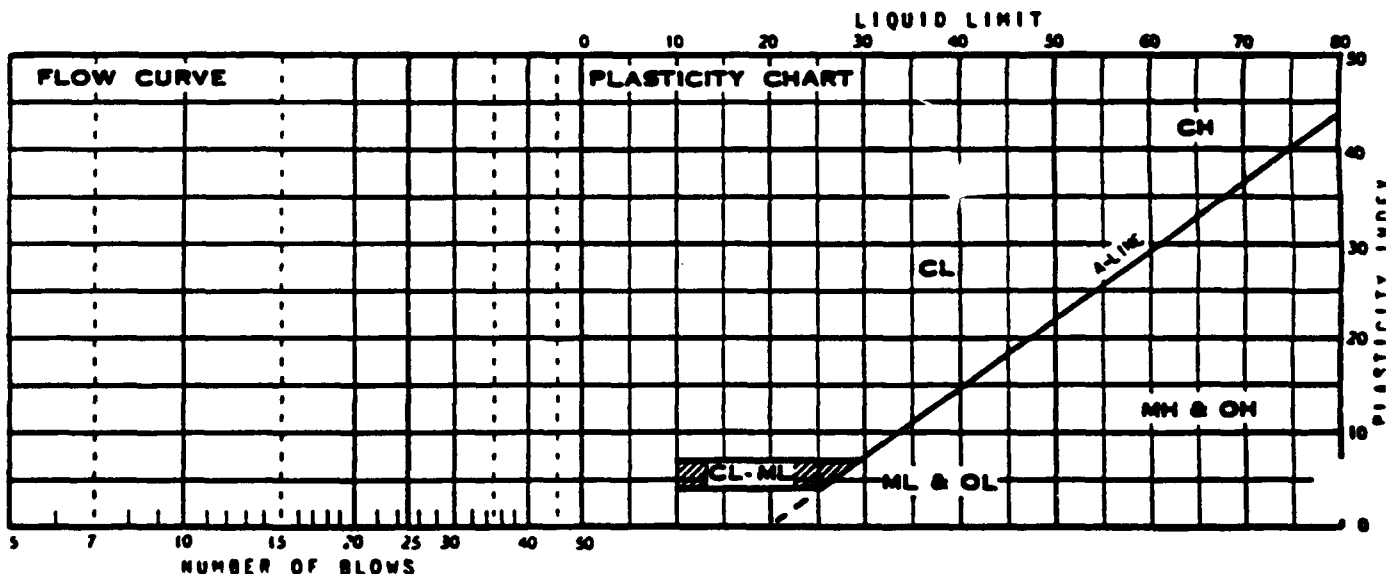
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF. 8.2592

DETERMINATION	1	2	3	4	5	6
DISH	AL102	Ab				
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL135	AL101	AL118			
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT						

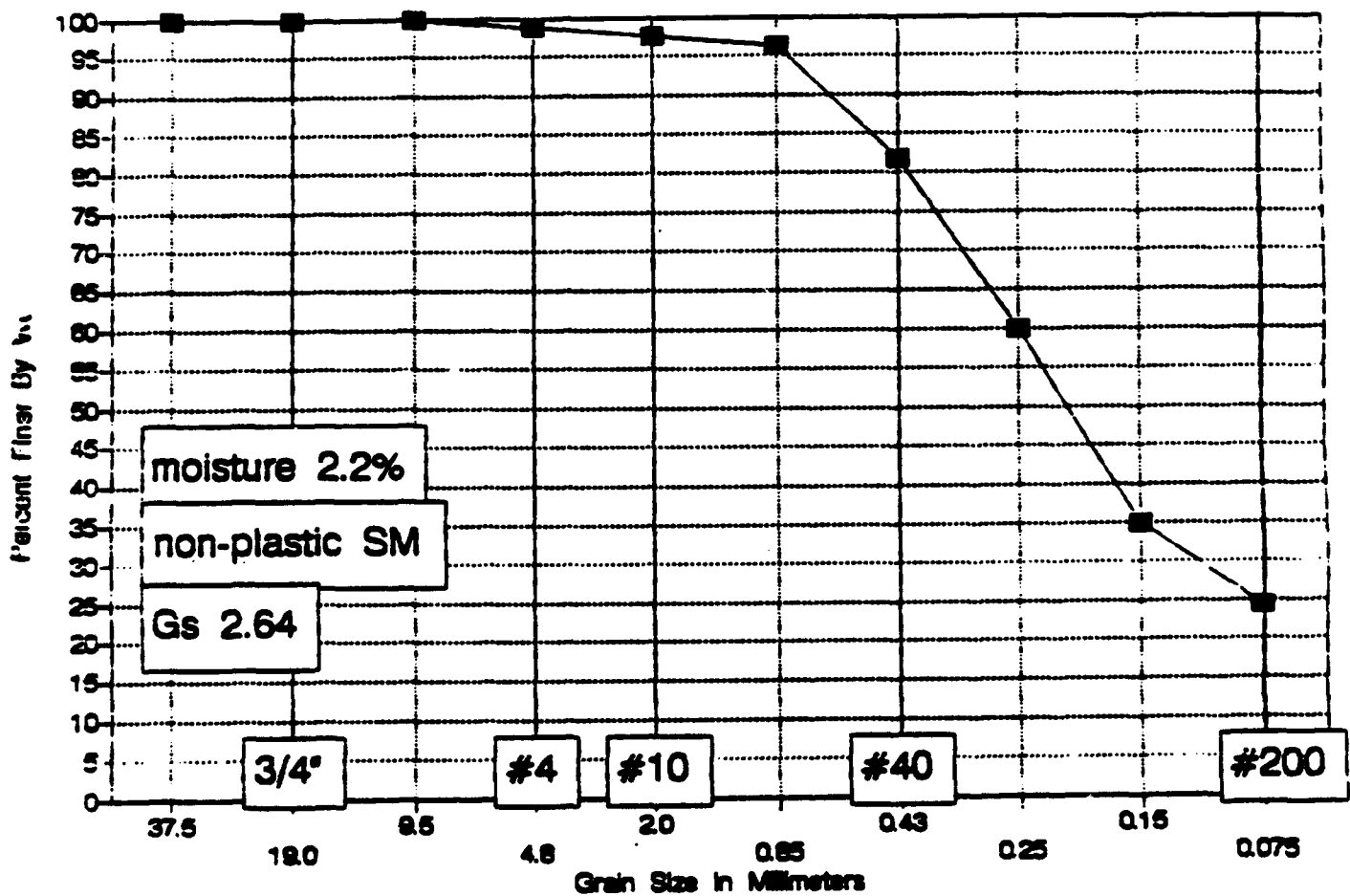


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					NIP

# GRADATION CURVE

Site SB-BK-001, Sample at 0 to 1 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	SB-BK-001	Wt soil and dish	270.2
Depth	0-1 feet	Dry soil & dish	266.7
		Dish	110.7
Moisture Content =	2.2		

#### SIEVE ANALYSIS

Dry weight of total sample= 156

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	2	98.72%	98.7	4.8
# 10	3.6	97.69%	97.7	2.0
# 20	5.6	96.41%	96.4	0.85
# 40	28.3	81.86%	81.9	0.43
# 60	62.3	60.06%	60.1	0.25
# 100	101.4	35.00%	35.0	0.15
# 200	118.1	24.29%	24.3	0.075

SA

# MECHANICAL ANALYSIS

DATE 9/14/92 BY LAF  
 JOB NUMBER -6081 OWNER/CLIENT Jm Montgomerie  
 LOCATION \_\_\_\_\_  
 BORING SB-BK SAMPLE 001 DEPTH 0-1'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>213</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>270.2</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>266.7</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>110.7</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>2.2</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		2.0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		3.6			
		#20		5.6			
		#40		28.3			
		#60		62.3			
		#100		101.4			
		#200		118.1			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO. - 10451  
 CLIENT/OWNER JM Montgomery  
 LOCATION CB BK SAMPLE 001 DEPTH 0-1'

FIELD DENSITY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

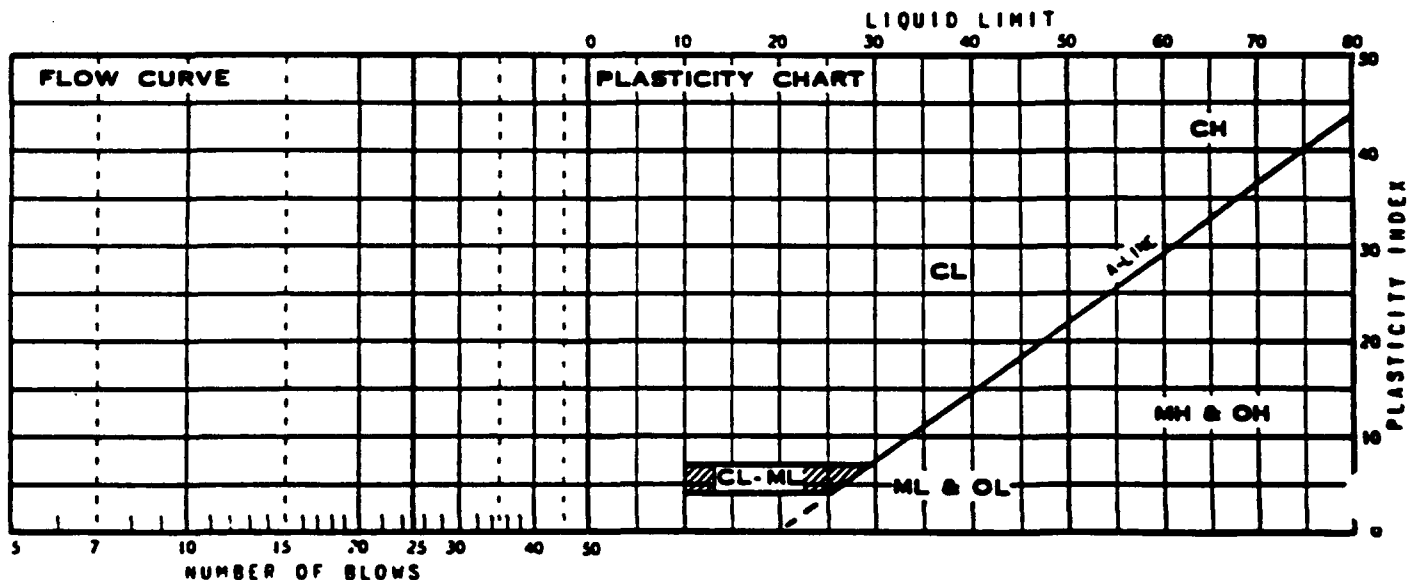
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY U.F. 9.1692

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL106</u>	<u>AL131</u>	<u>could not fill lead</u>			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL120</u>	<u>AL5</u>	<u>AL102</u>	<u>could not get adequate blow count</u>		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL					<u>(25)</u>	
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						

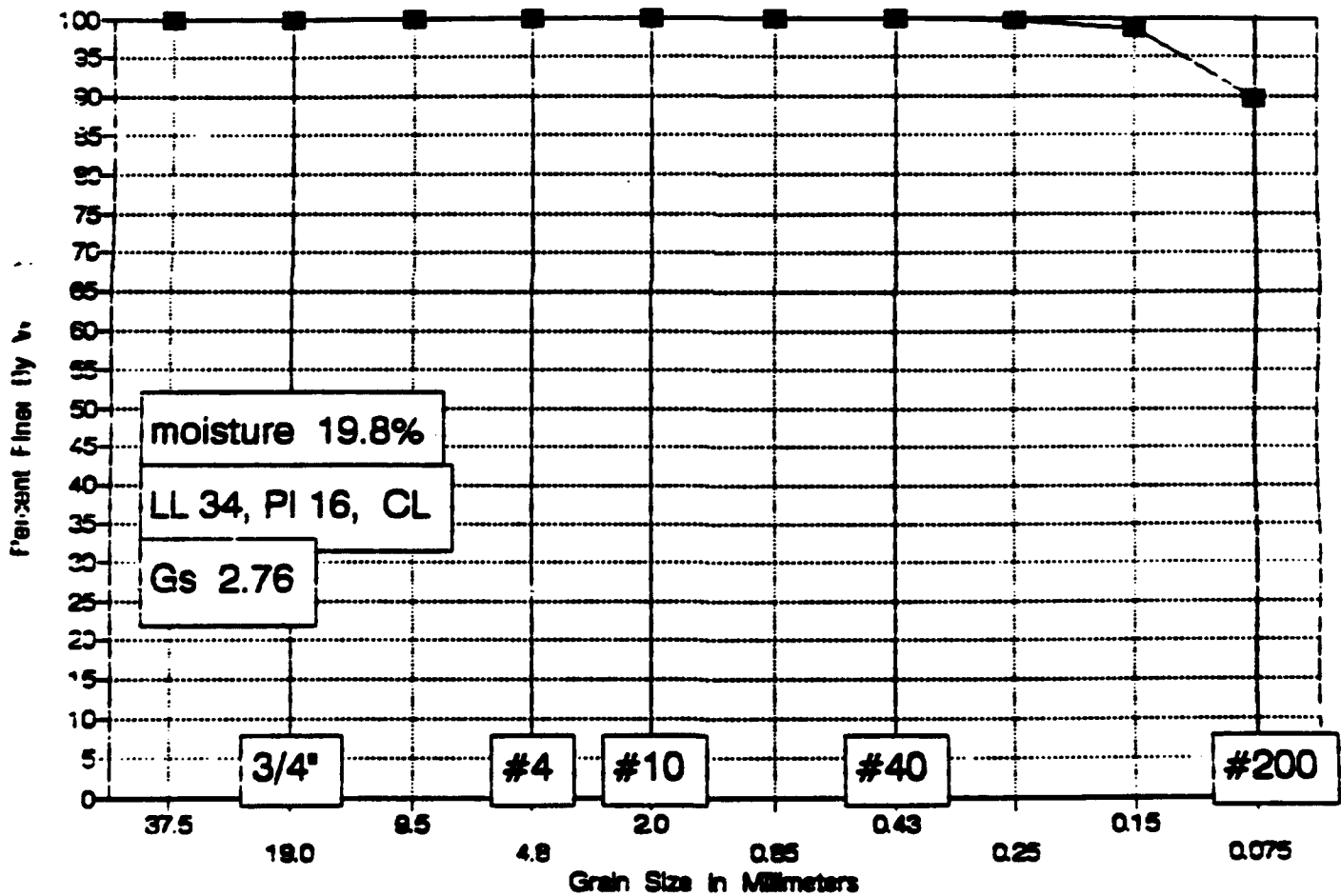


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>NP</u>

# GRADATION CURVE

Site SB-BK-006, Sample at 60 feet





James M. Montgomery  
P.O. 2942-0130

Site ID	SB-BK-006	Wt soil and dish	403.1
		Dry soil & dish	354.3
Depth	60 feet	Dish	108.1
Moisture Content =	19.8		

#### SIEVE ANALYSIS

Dry weight of total sample= 246.2

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.02	99.99%	100.0	2.0
# 20	0.05	99.98%	100.0	0.85
# 40	0.27	99.89%	99.9	0.43
# 60	0.91	99.63%	99.6	0.25
# 100	3.45	98.60%	98.6	0.15
# 200	25.37	89.70%	89.7	0.075

# MECHANICAL ANALYSIS

SA

DATE 8/20/92 BY LAF  
 JOB NUMBER -6081 OWNER/CLIENT um manisonery  
 LOCATION \_\_\_\_\_  
 BORING SB-BK SAMPLE 006 DEPTH 60'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>307</u>
WT. OF RINGS & WET SOIL	<u>/</u>	WT. OF DISH & WET SOIL	<u>403.1</u>
WT. OF RINGS	<u>/</u>	WT. OF DISH & DRY SOIL	<u>354.3</u>
WT. OF WET SOIL	<u>/</u>	WT. OF MOISTURE	<u>108.1</u>
FIELD DENSITY	<u>/</u>	WT. OF DISH	<u>108.1</u>
DRY DENSITY	<u>/</u>	WT. OF DRY SOIL	<u>19.8</u>
		FIELD MOISTURE CONTENT	<u>19.8</u>

WASH SEIVE \_\_\_\_\_ DRY SEIVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEIVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		0.02			
		#20		0.05			
		#40		0.27			
		#60		0.91			
		#100		3.45			
		#200		25.37			
		PAN					
		TOTAL					

# ATZBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO. 0001  
 CLIENT/OWNER IMMONTSONERY  
 LOCATION SB-B SAMPLE 222 DEPTH 60'

FIELD DENSITY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

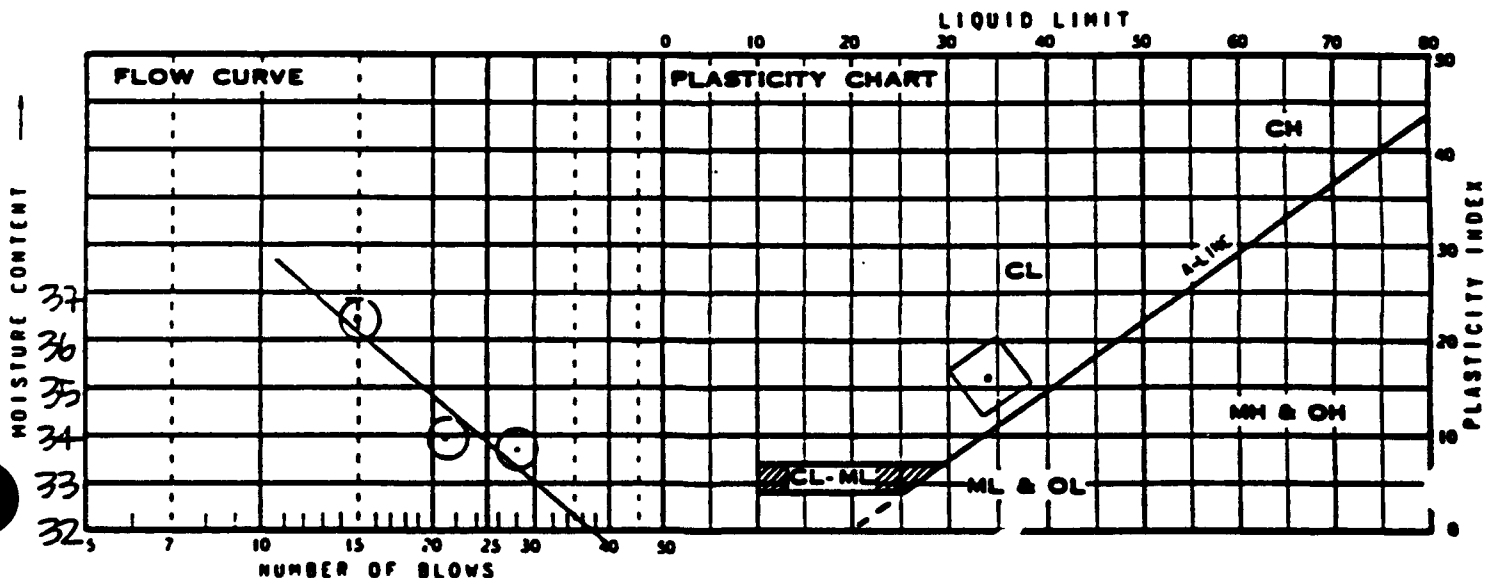
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY U.E. 0.2592

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL102</u>	<u>A-6</u>				
WT OF DISH + WET SOIL	<u>16.20</u>	<u>19.17</u>				
WT OF DISH + DRY SOIL	<u>13.90</u>	<u>16.40</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT	<u>18.40</u>	<u>18.47</u>	<u>X=18</u>			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL135</u>	<u>AL101</u>	<u>AL118</u>			
NUMBER OF BLOWS	<u>20</u>	<u>21</u>	<u>15</u>			
WT OF DISH + WET SOIL	<u>11.07</u>	<u>10.75</u>	<u>11.02</u>			
WT OF DISH + DRY SOIL	<u>9.23</u>	<u>8.38</u>	<u>8.45</u>			
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT	<u>33.72</u>	<u>33.95</u>	<u>36.45</u>			



SUMMARY

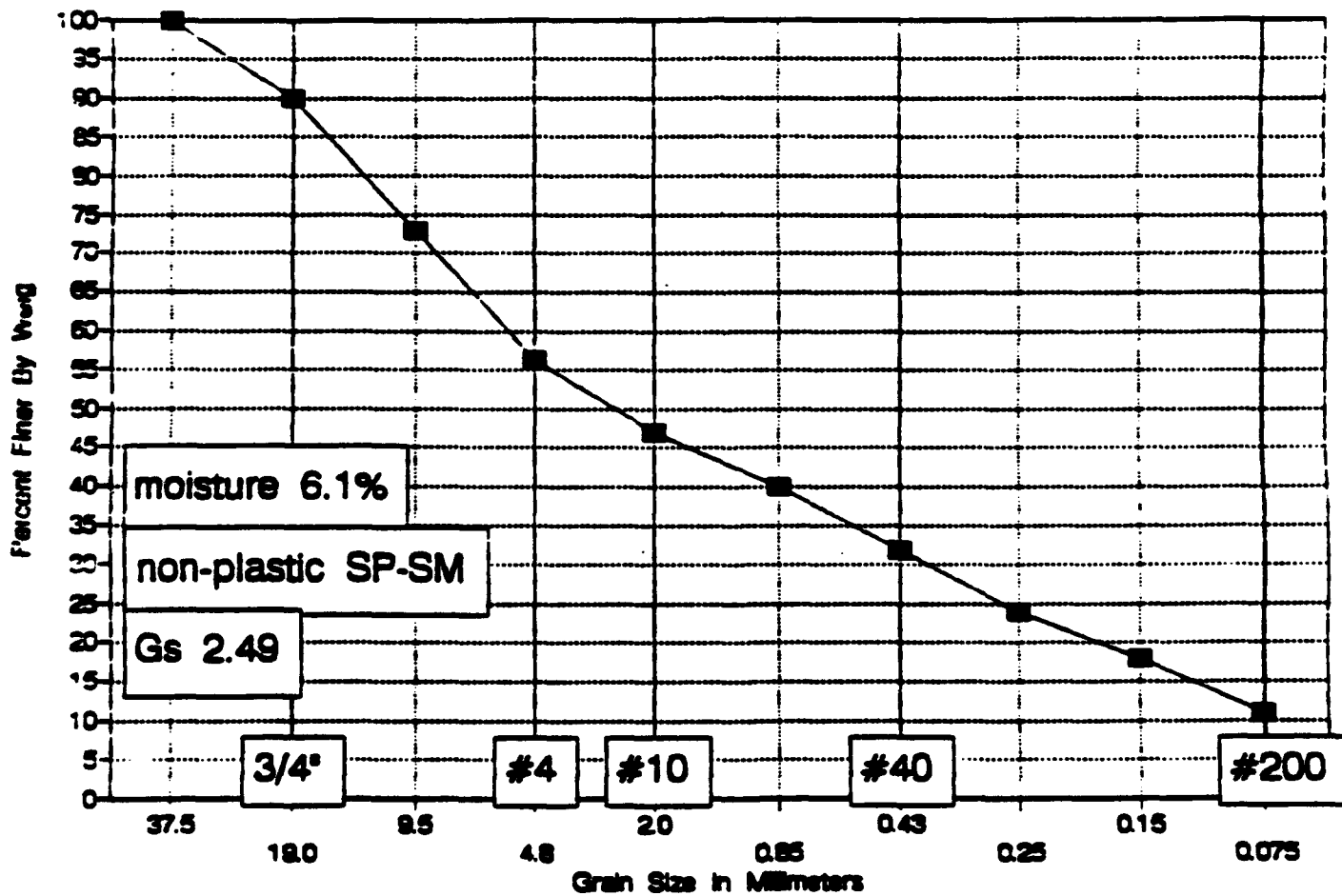
DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		<u>34</u>	<u>18</u>	<u>16</u>	<u>CL</u>

**SEDIMENT AND SURFACE SOIL SAMPLES**

**SWMUs 4, 19, 20, 21, 26, 27, 28, 34, 37, 38, 42, 46**

# GRADATION CURVE

Site SD-45-001, Sample at 0 to 0.2 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	SD-45-001	Wt soil and dish	228.9
Depth	0-0.2 feet	Dry soil & dish	222
		Dish	109.3
Moisture Content =	6.1		

#### SIEVE ANALYSIS

Dry weight of total sample= 112.7

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	11.2	90.06%	90.1	19.0
3/8 inch	30.6	72.85%	72.8	9.5
# 4	49.3	56.26%	56.3	4.8
# 10	59.9	46.85%	46.9	2.0
# 20	67.6	40.02%	40.0	0.85
# 40	76.8	31.85%	31.9	0.43
# 60	85.7	23.96%	24.0	0.25
# 100	92.5	17.92%	17.9	0.15
# 200	100.4	10.91%	10.9	0.075

# MECHANICAL ANALYSIS

SA

DATE 9/8/92 BY LJE  
 JOB NUMBER -6051 OWNER/CLIENT Jimmie Montgomery  
 LOCATION \_\_\_\_\_  
 BORING GD-45 SAMPLE 001 DEPTH 0-0.2'

NUMBER OF RINGS	<u>100g</u>	DISH	<u>215</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>228.9</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>222.0</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>109.3</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>6.1</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		<u>0</u>		
		3/4"		<u>11.2</u>		
		3/8"		<u>30.6</u>		
		#4		<u>49.3</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCU WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>59.9</u>			
		#20		<u>67.6</u>			
		#40		<u>76.8</u>			
		#60		<u>85.7</u>			
		#100		<u>92.5</u>			
		#200		<u>100.4</u>			
		PAN					
		TOTAL					

LABORATORY CLASSIFICATION

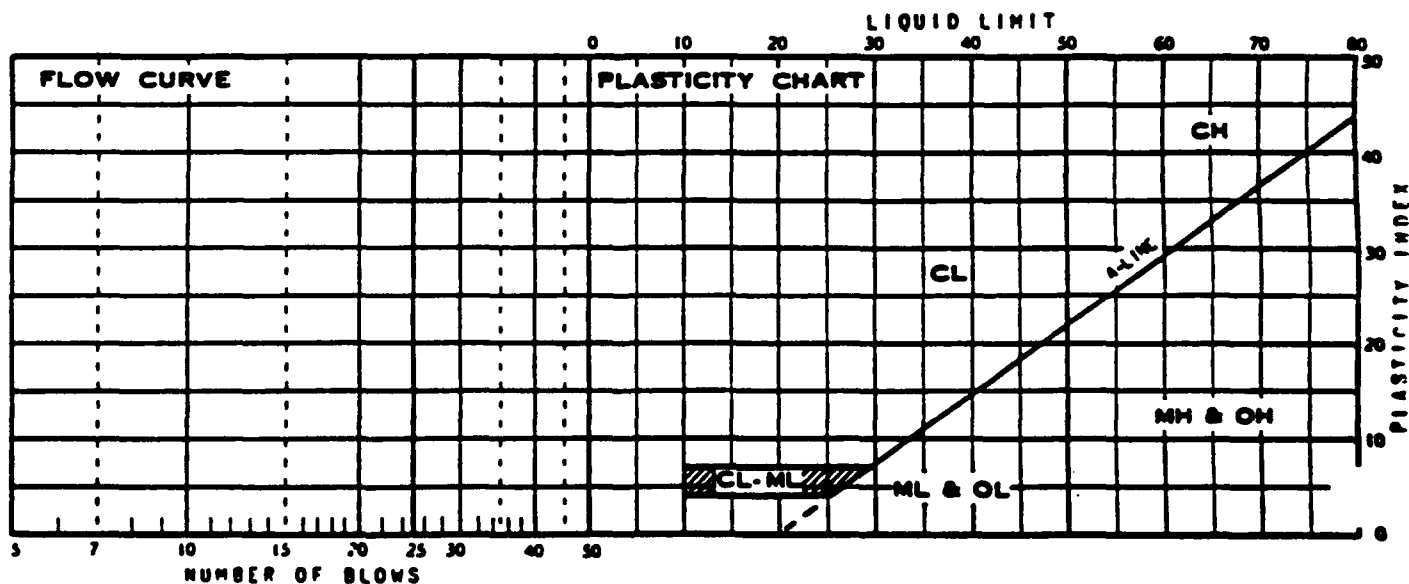
JOB NO. - 6031  
 CLIENT/OWNER um man society  
 LOCATION \_\_\_\_\_  
 BORING 3D-45 SAMPLE 001 DEPTH 0-0.2

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	_____	_____
WT OF MOISTURE		
WT OF DISH	_____	_____
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

DETERMINATION	1	2	3	4	5.	6
DISH	<del>AL 82</del>	<del>AL 99</del>	ORGANIC -		could barely	
WT OF DISH + WET SOIL	<del>—</del>	<del>—</del>	—	—	thread but	
WT OF DISH + DRY SOIL	<del>—</del>	<del>—</del>	—	—	not to 1/8"	
WT OF MOISTURE	<del>—</del>	<del>—</del>	—	—	—	—
WT OF DISH	<del>1.4</del>	<del>1.4</del>	—	—	—	—
WT OF DRY SOIL	<del>—</del>	<del>—</del>	—	—	—	—
MOISTURE CONTENT	<del>—</del>	<del>—</del>	—	—	—	—

DETERMINATION	1	2	3	4	5	6
DISH	AL92	AL10A	AL100	COULD NOT GET		
NUMBER OF BLOWS				accurate		
WT OF DISH + WET SOIL				KAW SOUTH		
WT OF DISH + DRY SOIL					(75)	
WT OF MOISTURE						
WT OF DISH	14	14	14			
WT OF DRY SOIL						
MOISTURE CONTENT						

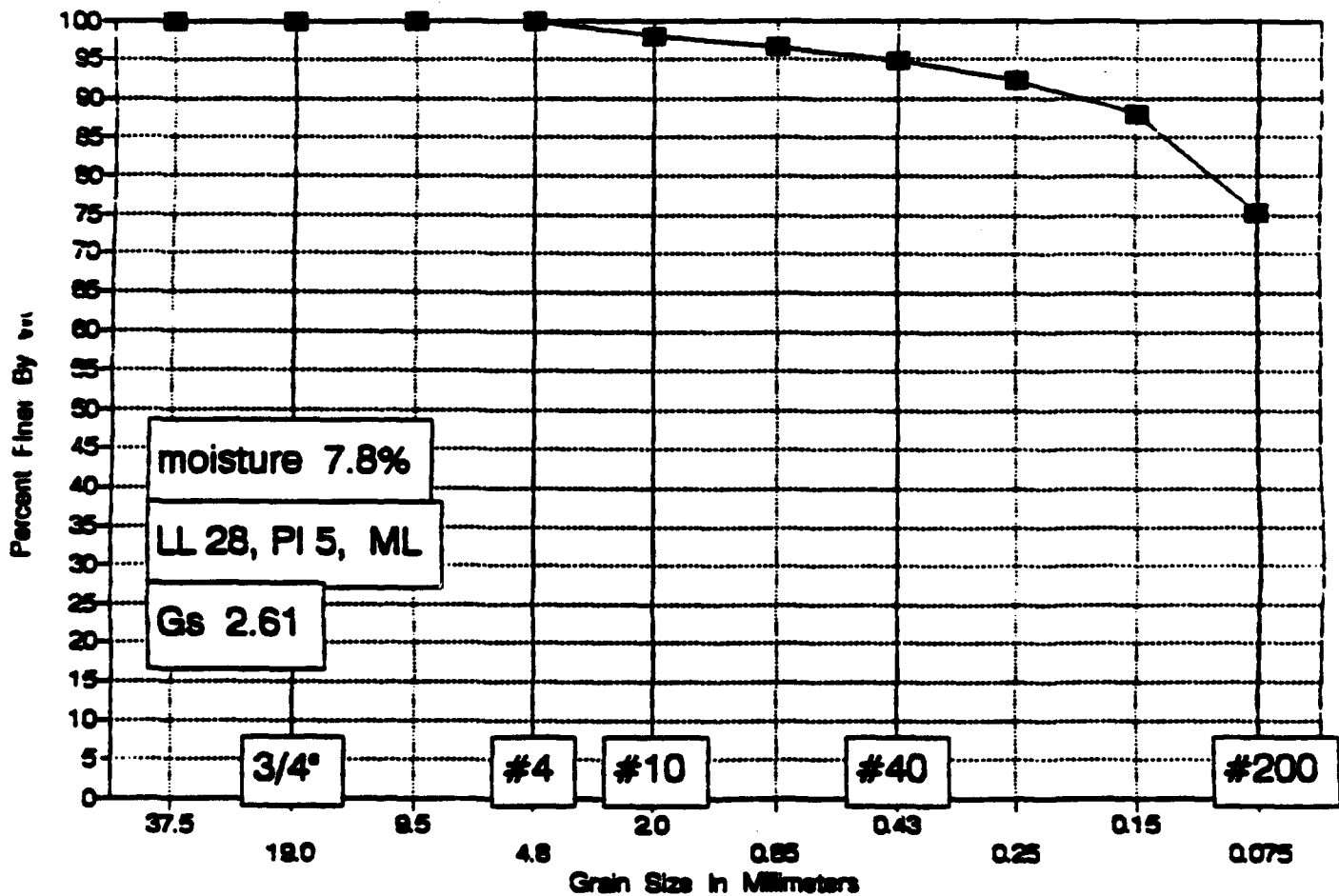


DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					NP



# GRADATION CURVE

Site SS-01-004, Sample at 0 to 0.2 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	SS-01-004	Wt soil and dish	207.9
Depth	0-0.2 feet	Dry soil & dish	200.8
		Dish	109.9
Moisture Content =	7.8		

#### SIEVE ANALYSIS

Dry weight of total sample= 90.9

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	1.7	98.13%	98.1	2.0
# 20	3.2	96.48%	96.5	0.85
# 40	4.7	94.83%	94.8	0.43
# 60	7	92.30%	92.3	0.25
# 100	10.9	88.01%	88.0	0.15
# 200	22.4	75.36%	75.4	0.075

# MECHANICAL ANALYSIS

34

DATE 9/8/92

BY LAF

JOB NUMBER -6081

OWNER/CLIENT Jm Montgomery

LOCATION \_\_\_\_\_

BORING GS-01

SAMPLE 004

DEPTH 0-0.2'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>212</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>207.9</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>200.8</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>109.9</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>7.8</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		1.7			
		#20		3.2			
		#40		4.7			
		#60		7.0			
		#100		10.9			
		#200		22.4			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_  
LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. - 0001  
CLIENT/OWNER UMMONTGOMERY  
LOCATION \_\_\_\_\_  
BORING 6201 SAMPLE 004 DEPTH 0-0.2

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	_____	_____
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

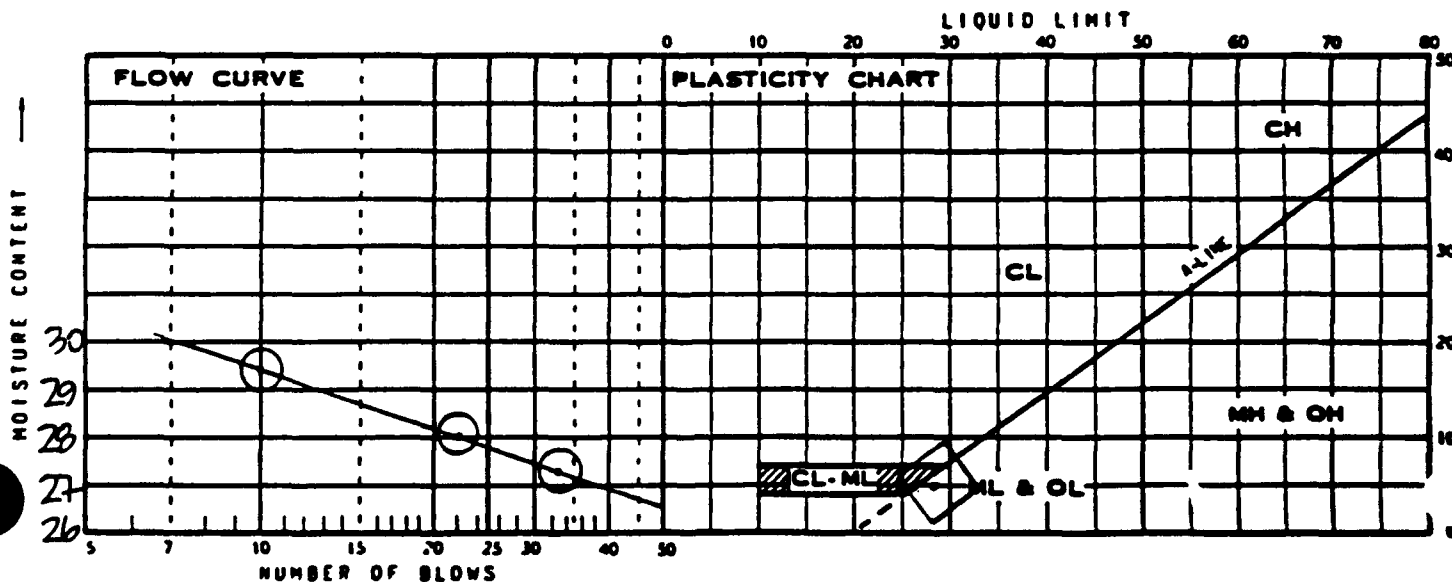
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	_____	_____
WT OF MOISTURE		
WT OF DISH	_____	_____
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY W.F. 9/1/92

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 93</u>	<u>AL 111</u>				
WT OF DISH + WET SOIL	<u>12.83</u>	<u>18.04</u>				
WT OF DISH + DRY SOIL	<u>10.72</u>	<u>14.96</u>				
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT	<u>22.64</u>	<u>22.71</u>	<u><math>\bar{x} = 23</math></u>			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>AL 94</u>	<u>AL 124</u>	<u>A-7</u>			
NUMBER OF BLOWS	<u>33</u>	<u>22</u>	<u>10</u>			
WT OF DISH + WET SOIL	<u>11.25</u>	<u>11.91</u>	<u>11.94</u>			
WT OF DISH + DRY SOIL	<u>9.14</u>	<u>9.61</u>	<u>9.55</u>			
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT	<u>27.26</u>	<u>28.01</u>	<u>29.33</u>			

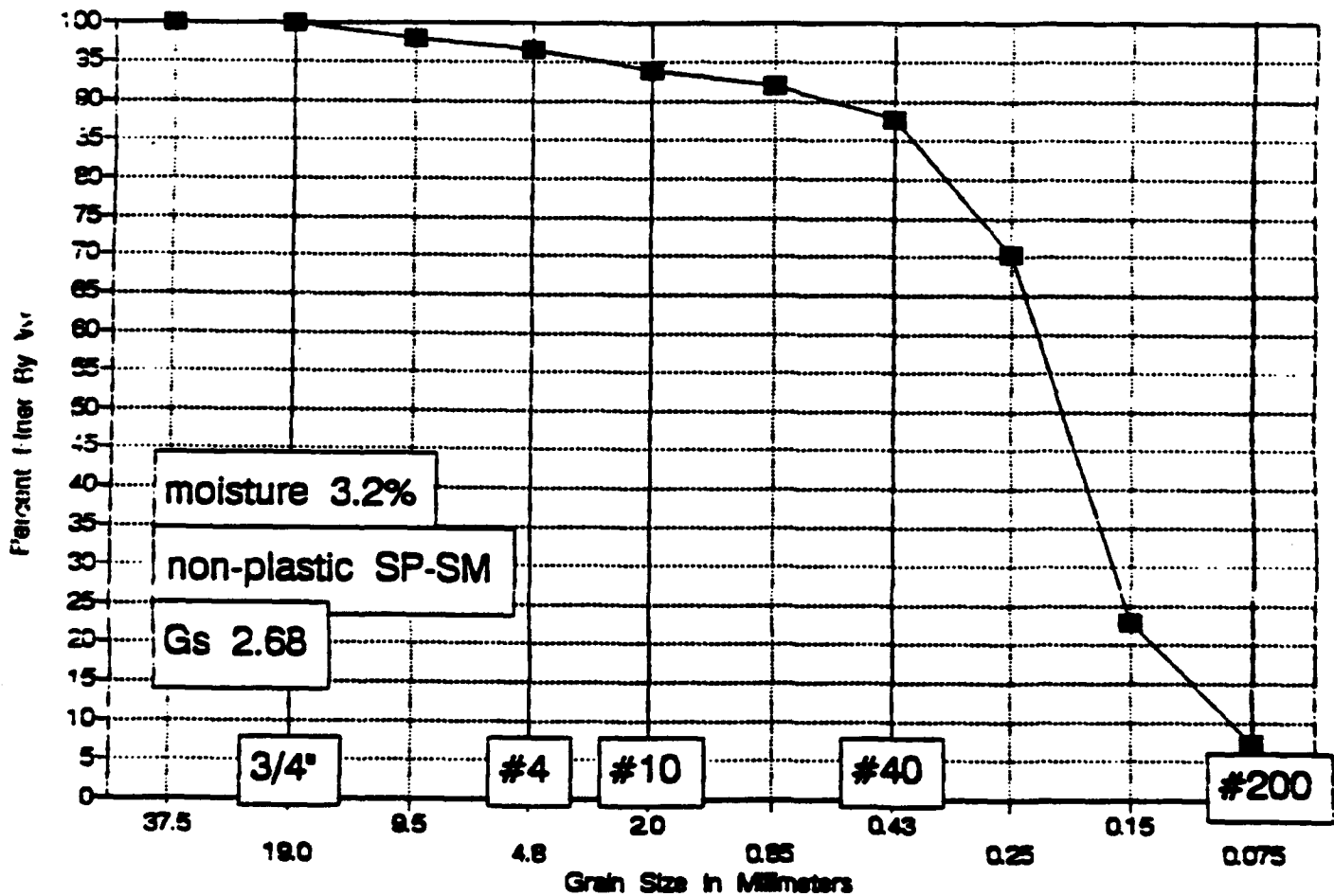


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		<u>28</u>	<u>23</u>	<u>5</u>	<u>ML</u>

# GRADATION CURVE

Site SS-19-006, Sample at 0 to 0.2 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	SS-19-006	Wt soil and dish	242.4
		Dry soil & dish	238.3
Depth	0-0.2 feet	Dish	110.9
Moisture Content =	3.2		

### SIEVE ANALYSIS

Dry weight of total sample= 127.4

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	2.6	97.96%	98.0	9.5
# 4	4.5	96.47%	96.5	4.8
# 10	7.8	93.88%	93.9	2.0
# 20	10.1	92.07%	92.1	0.85
# 40	15.6	87.76%	87.8	0.43
# 60	37.8	70.33%	70.3	0.25
# 100	98.3	22.84%	22.8	0.15
# 200	118.1	7.30%	7.3	0.075

# MECHANICAL ANALYSIS

SA

DATE 9/3/92 BY LAF  
 JOB NUMBER -6081 OWNER/CLIENT Jm montgomery  
 LOCATION \_\_\_\_\_  
 BORING GS-19 SAMPLE 006 DEPTH 0-0.2'

NUMBER OF RINGS	<u>bag</u>	DISH	<u>312</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>242.4</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>228.3</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>110.2</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>3.2</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		<u>0</u>		
		3/8"		<u>2.6</u>		
		#4		<u>4.5</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>7.8</u>			
		#20		<u>10.1</u>			
		#40		<u>15.6</u>			
		#60		<u>37.8</u>			
		#100		<u>98.3</u>			
		#200		<u>118.1</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO.

CLIENT/OWNER

LOCATION

BORING

19

SAMPLE

006

DEPTH

0-0.2

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

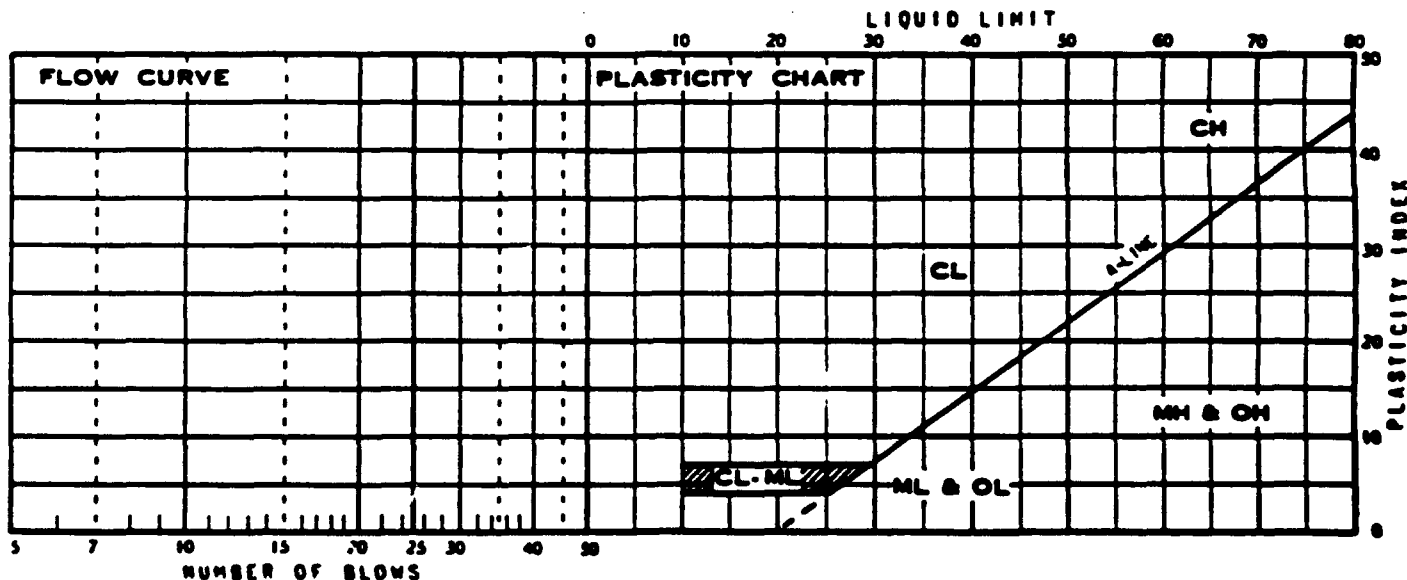
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LA F. 9.9.92

DETERMINATION	1	2	3	4	5	6
DISH	<del>AL 97</del>	<del>AL 116</del>				
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<del>AL 109</del>	<del>102</del>	<del>9A</del>			
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						



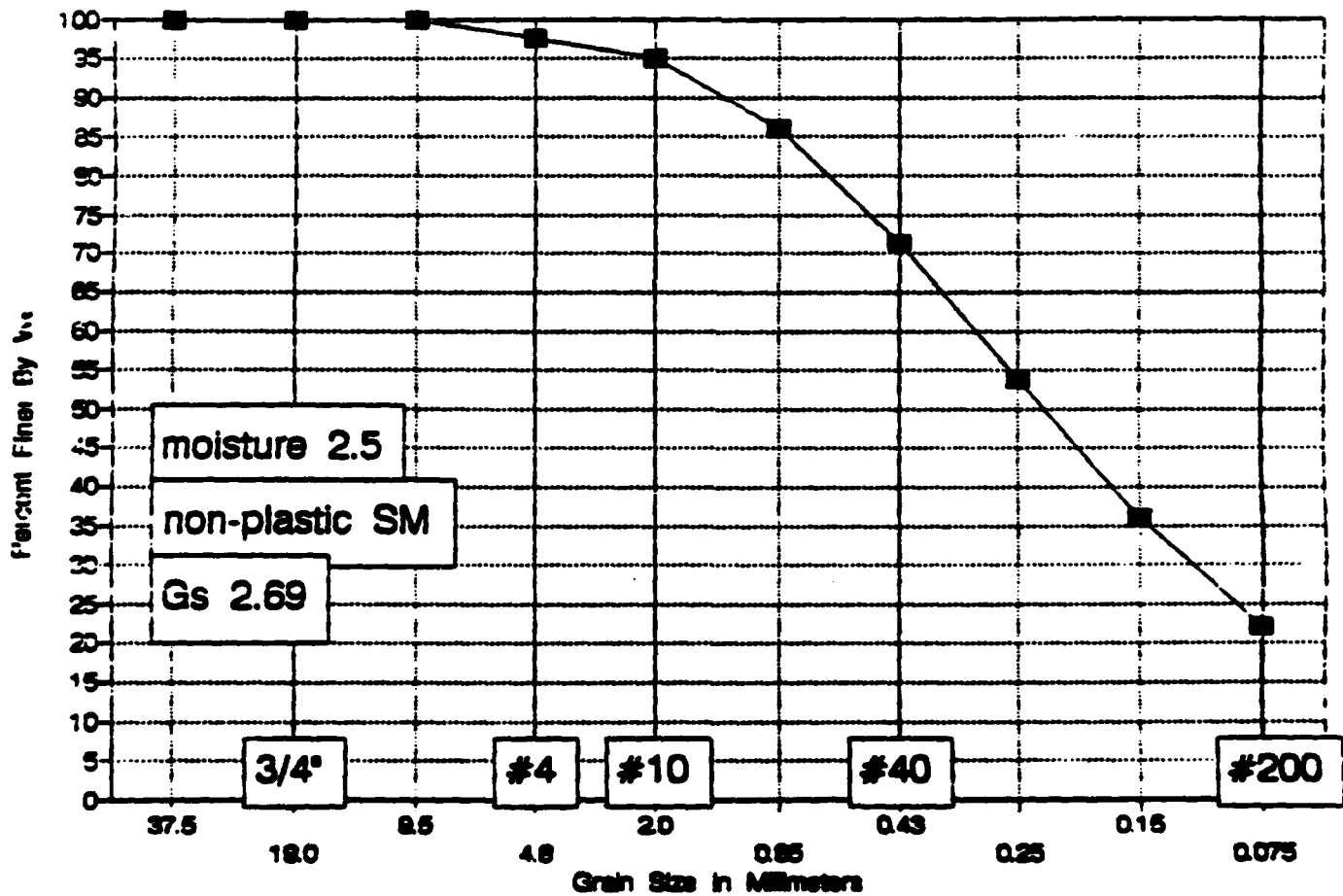
SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					NIP



# GRADATION CURVE

Site SS-20-016, Sample at 0 to 0.2 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	SS-20-016	Wt soil and dish	267.3
Depth	0-0.2 feet	Dry soil & dish	263.5
		Dish	113
Moisture Content =	2.5		

#### SIEVE ANALYSIS

Dry weight of total sample= 150.5

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	3.52	97.66%	97.7	4.8
# 10	7.37	95.10%	95.1	2.0
# 20	21	86.05%	86.0	0.85
# 40	43.02	71.42%	71.4	0.43
# 60	69.47	53.84%	53.8	0.25
# 100	96.38	35.96%	36.0	0.15
# 200	117.33	22.04%	22.0	0.075

# MECHANICAL ANALYSIS

DATE 6/20/02 BY LF  
 JOB NUMBER - 202 OWNER/CLIENT Immobility  
 LOCATION \_\_\_\_\_  
 BORING SS-20 SAMPLE 016 DEPTH 0-0.2'

NUMBER OF RINGS	<u>227</u>	DISH	<u>301</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>267.3</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>263.5</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>113.0</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>2.5</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		<u>0</u>		
		#4		<u>3.52</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>7.37</u>			
		#20		<u>21.00</u>			
		#40		<u>43.02</u>			
		#60		<u>69.47</u>			
		#100		<u>96.38</u>			
		#200		<u>117.33</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

JOB NO. -10051  
 CLIENT/OWNER IN  
 LOCATION IN  
 BORING 32-20 SAMPLE Q15 DEPTH 0-02'

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

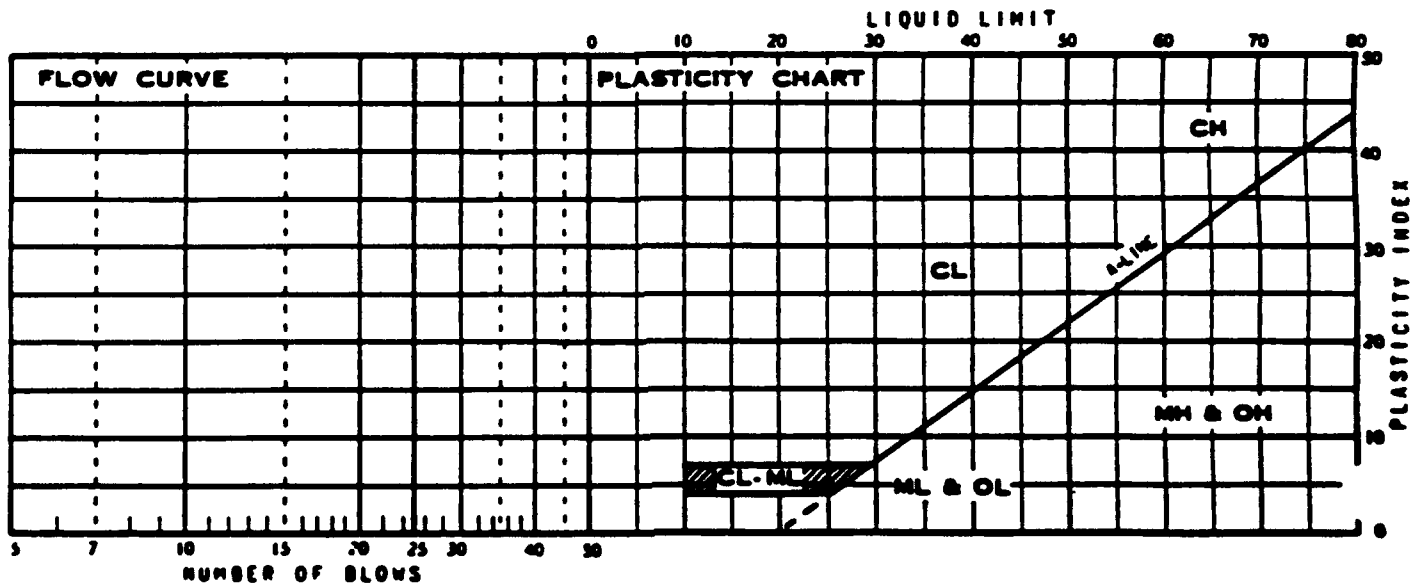
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE. 52492

DETERMINATION	1	2	3	4	5	6
DISH	15	AL121		difficult to + thread (carefully)		
WT OF DISH + WET SOIL	16.21	14.73				
WT OF DISH + DRY SOIL	13.66	12.46				
WT OF MOISTURE						
WT OF DISH	1.4	1.4				
WT OF DRY SOIL						
MOISTURE CONTENT	20.80	20.52	X=21			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL123	A-7	AL03	could not get adequate blow count (25)		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4			
WT OF DRY SOIL						
MOISTURE CONTENT						

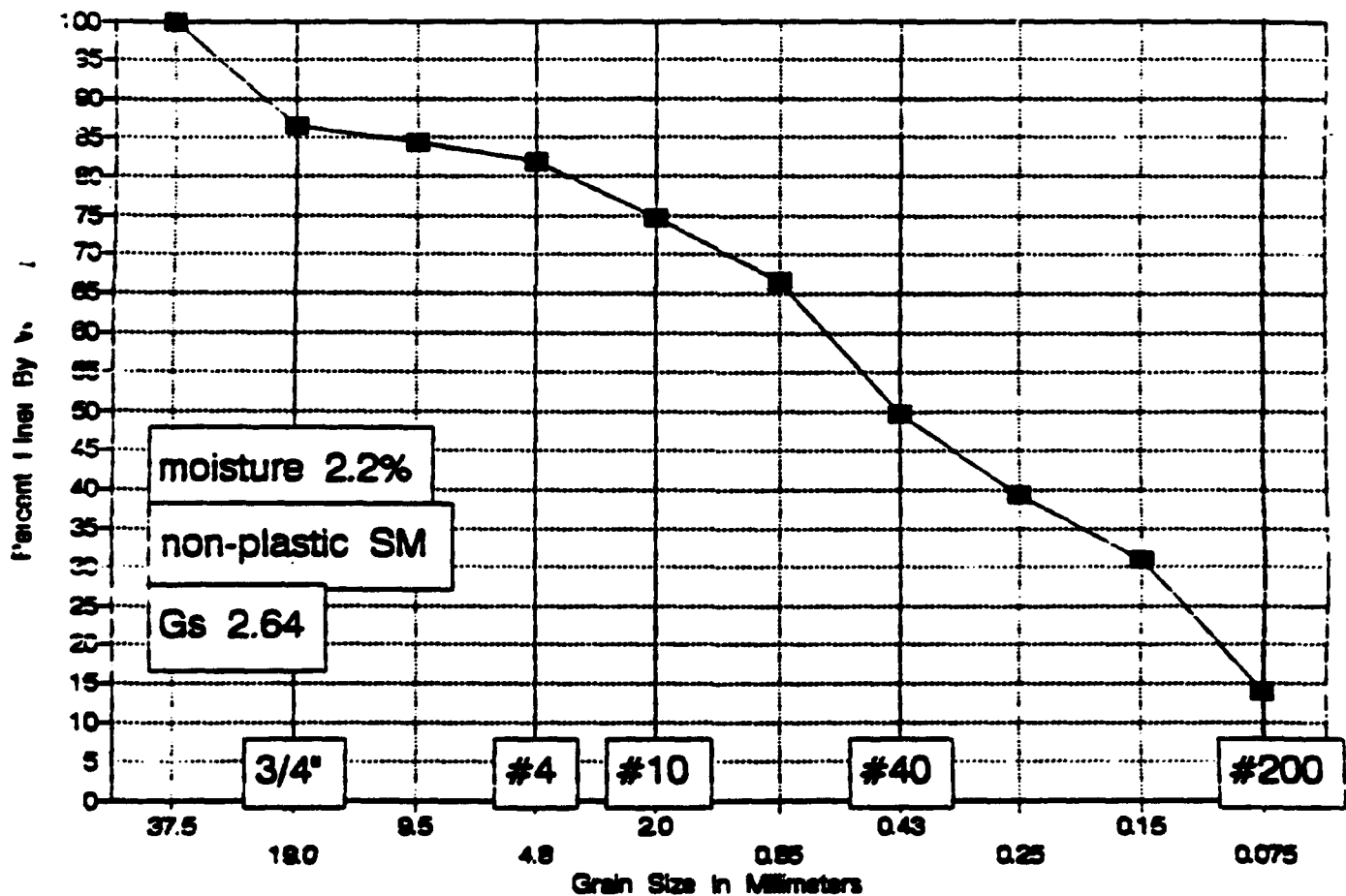


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
			21		NP

# GRADATION CURVE

Site SS-21-001, Sample at 0 to 0.2 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	SS-21-001	Wt soil and dish	277.6
Depth	0-0.2 feet	Dry soil & dish	274.1
		Dish	112.1
Moisture Content =	2.2		

#### SIEVE ANALYSIS

Dry weight of total sample= 162

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	21.9	86.48%	86.5	19.0
3/8 inch	25.1	84.51%	84.5	9.5
# 4	29.2	81.98%	82.0	4.8
# 10	40.9	74.75%	74.8	2.0
# 20	54.4	66.42%	66.4	0.85
# 40	81.4	49.75%	49.8	0.43
# 60	98.3	39.32%	39.3	0.25
# 100	112.1	30.80%	30.8	0.15
# 200	139.4	13.95%	14.0	0.075

# MECHANICAL ANALYSIS

34

DATE 9/4/92 BY LAF  
 JOB NUMBER -6081 OWNER/CLIENT Jm montgomery  
 LOCATION \_\_\_\_\_  
 BORING CB-21 SAMPLE 001 DEPTH 0-0.2'

NUMBER OF RINGS	<i>bag</i>	DISH	<u>303</u>
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	<u>277.6</u>
WT. OF RINGS		WT. OF DISH & DRY SOIL	<u>274.1</u>
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	<u>112.1</u>
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	<u>2.2</u>

WASH SIEVE \_\_\_\_\_ DRY SIEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		<u>21.9</u>		
		3/8"		<u>25.1</u>		
		#4		<u>29.2</u>		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		<u>40.9</u>			
		#20		<u>54.4</u>			
		#40		<u>81.4</u>			
		#60		<u>98.3</u>			
		#100		<u>112.1</u>			
		#200		<u>139.4</u>			
		PAN					
		TOTAL					

# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_

LABORATORY CLASSIFICATION \_\_\_\_\_

FIELD DENSITY BY \_\_\_\_\_

JOB NO. -6001  
 CLIENT/OWNER JMMA  
 LOCATION SP75 SAMPLE 02's DEPTH 0-32

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

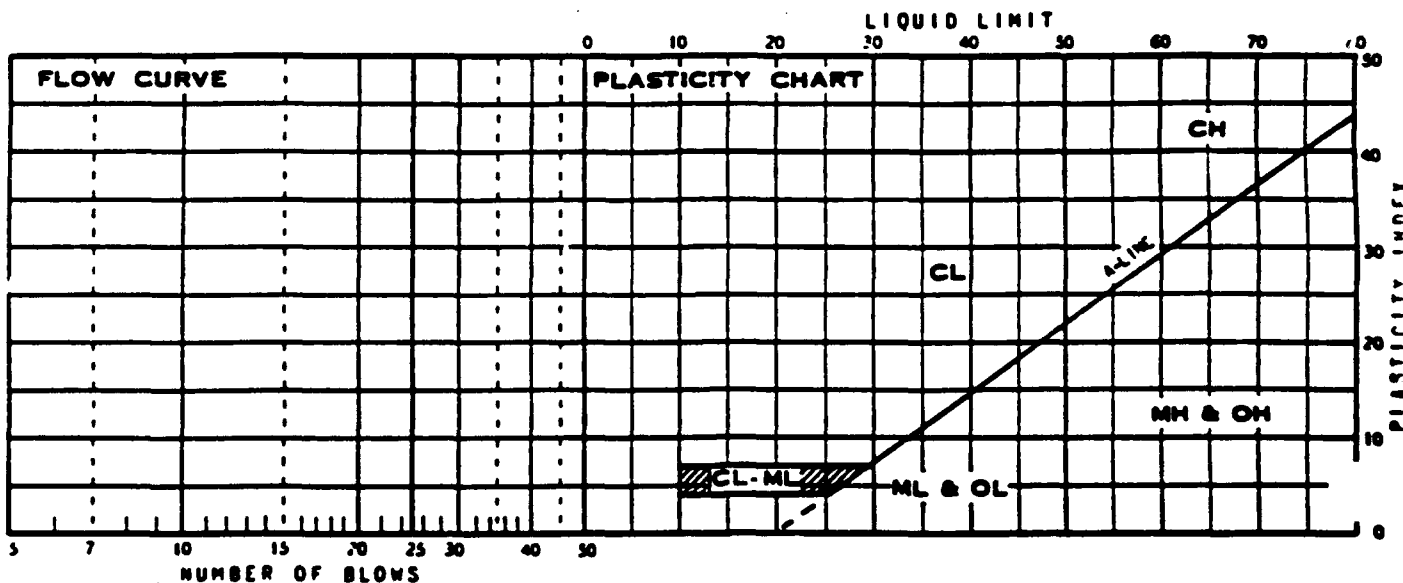
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY U.E. 9992

DETERMINATION	1	2	3	4	5	6
DISH	<del>A-4</del>	<del>A-4</del>	could not Hreen			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT						

## LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<del>A-4</del>	<del>A-4</del>	<del>611</del>	could not get adequate blow count		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						



## SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					NP



AD-A282 574

FOOEE ARMY DEPOT-NORTH AREA SUSPECTED RELEASES SMMOS

15715

VOLUME 2 APPENDICES A - J REVISION(U) MONTGOMERY

WATSON WALNUT CREEK CA DEC 93 XA-USAEC

UNCLASSIFIED

DAAA15-90-D-0011

NL

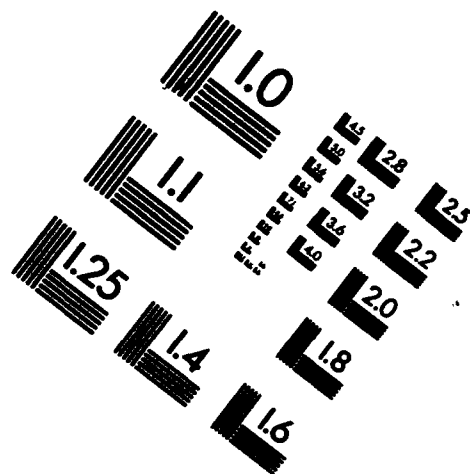
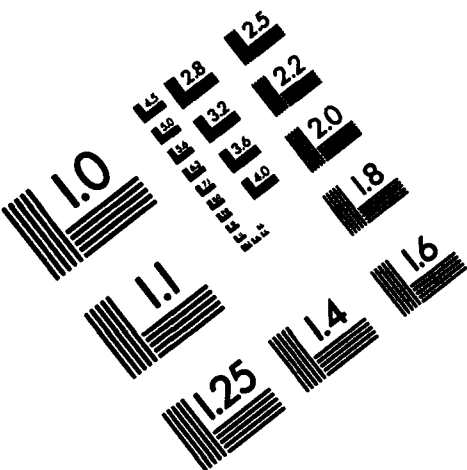
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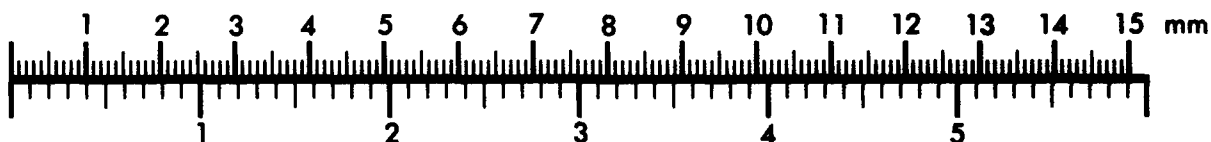
AIM

Association for Information and Image Management

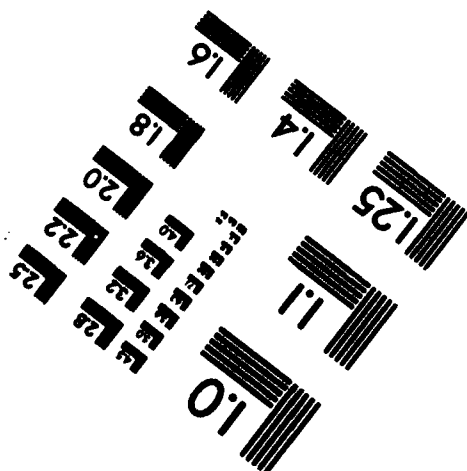
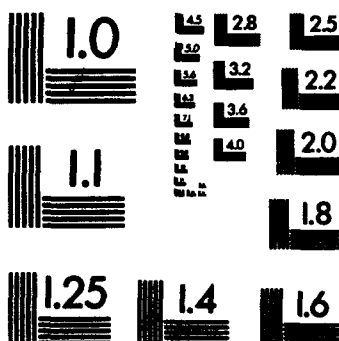
1100 Wayne Avenue, Suite 1100  
Silver Spring, Maryland 20910  
301/587-8202



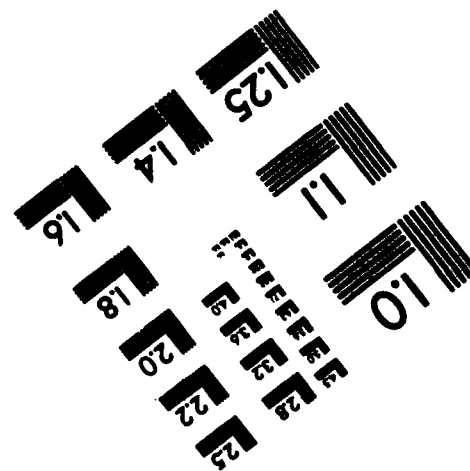
Centimeter



Inches

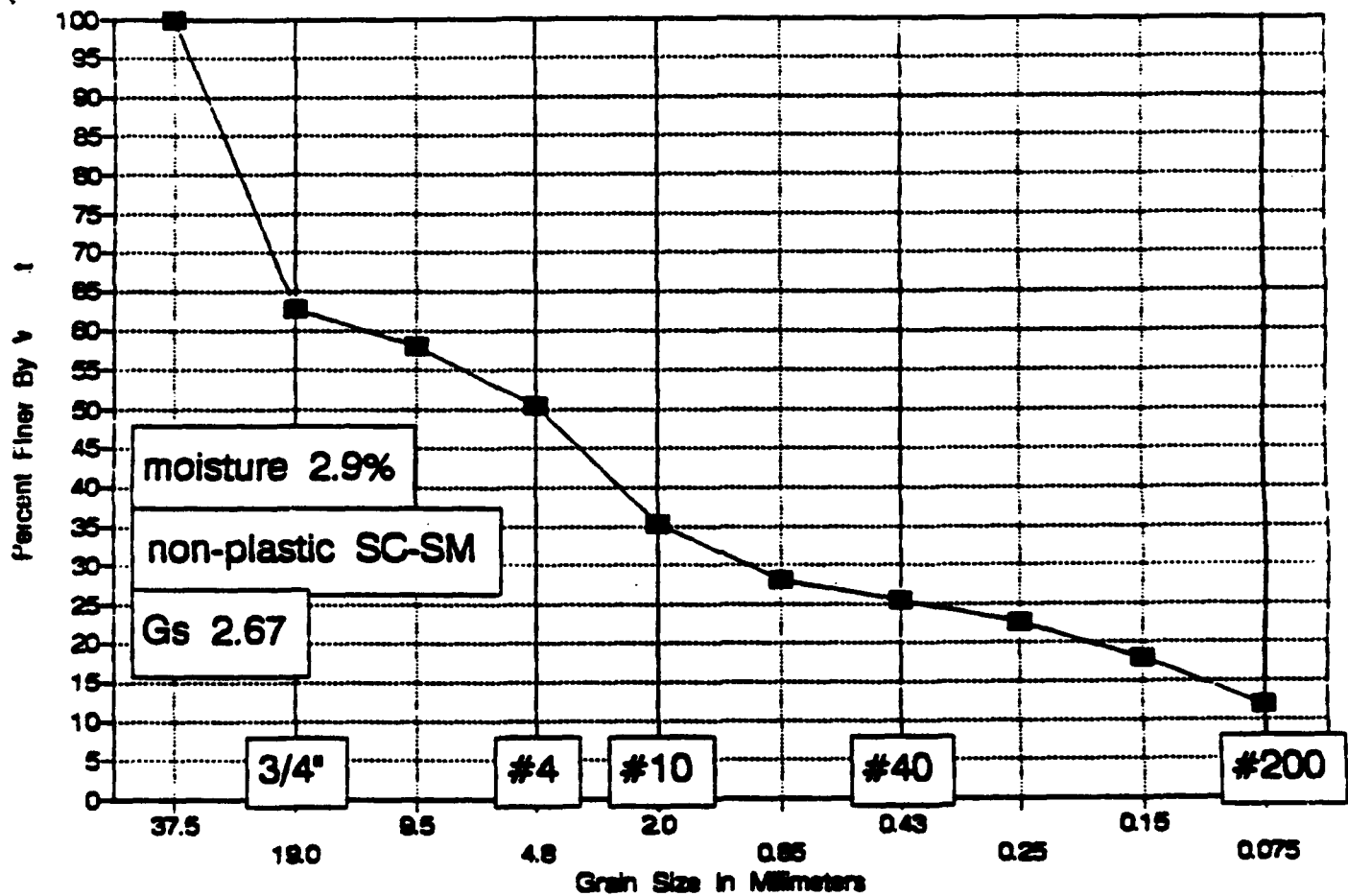


MANUFACTURED TO AIM STANDARDS  
BY APPLIED IMAGE, INC.



**Site SS-26-034, Sample at 0 to 0.2 feet**

**Site SS-26-034, Sample at 0 to 0.2 feet**



# ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION \_\_\_\_\_

LABORATORY CLASSIFICATION \_\_\_\_\_

JOB NO. - 6081  
 CLIENT/OWNER Jrnnmontzomsky  
 LOCATION \_\_\_\_\_

BORING CS-21 SAMPLE 001 DEPTH 0-0.2

FIELD DENSITY BY \_\_\_\_\_

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS		
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD \_\_\_\_\_

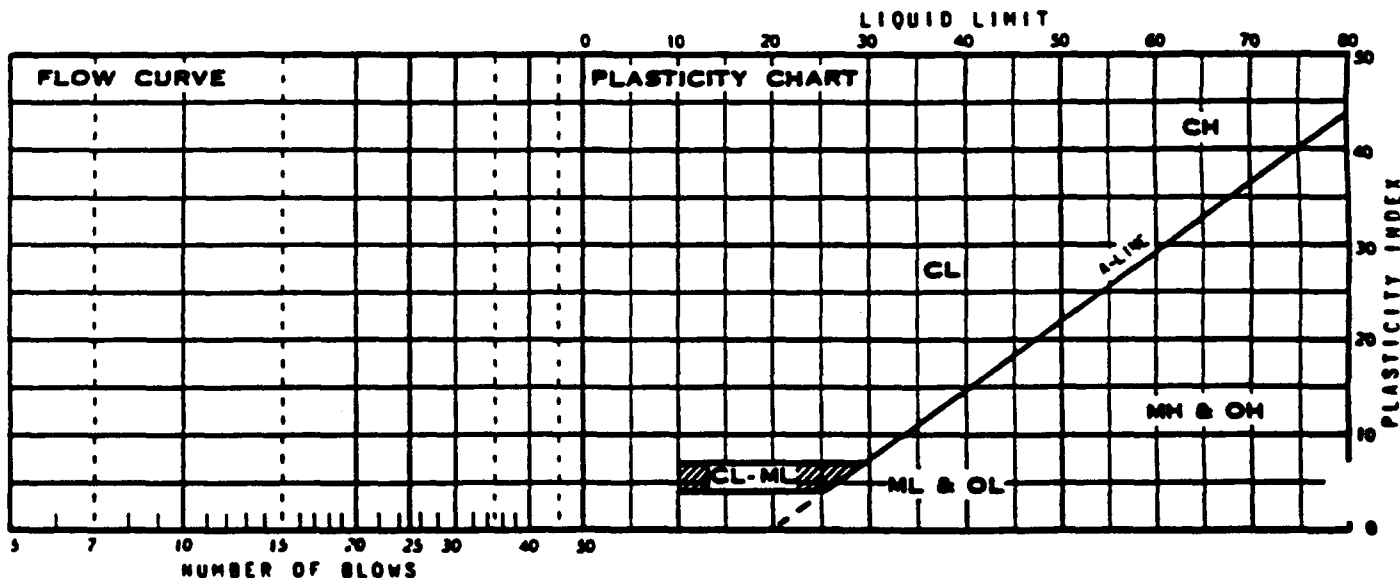
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL		
WT OF MOISTURE		
WT OF DISH		
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY CAF-9992

DETERMINATION	1	2	3	4	5	6
DISH	<u>A-4</u>	<u>AL94</u>				
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>				
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	<u>A-4</u>	<u>A-8</u>	<u>611</u>			
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL						
WT OF MOISTURE						
WT OF DISH	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>			
WT OF DRY SOIL						
MOISTURE CONTENT						

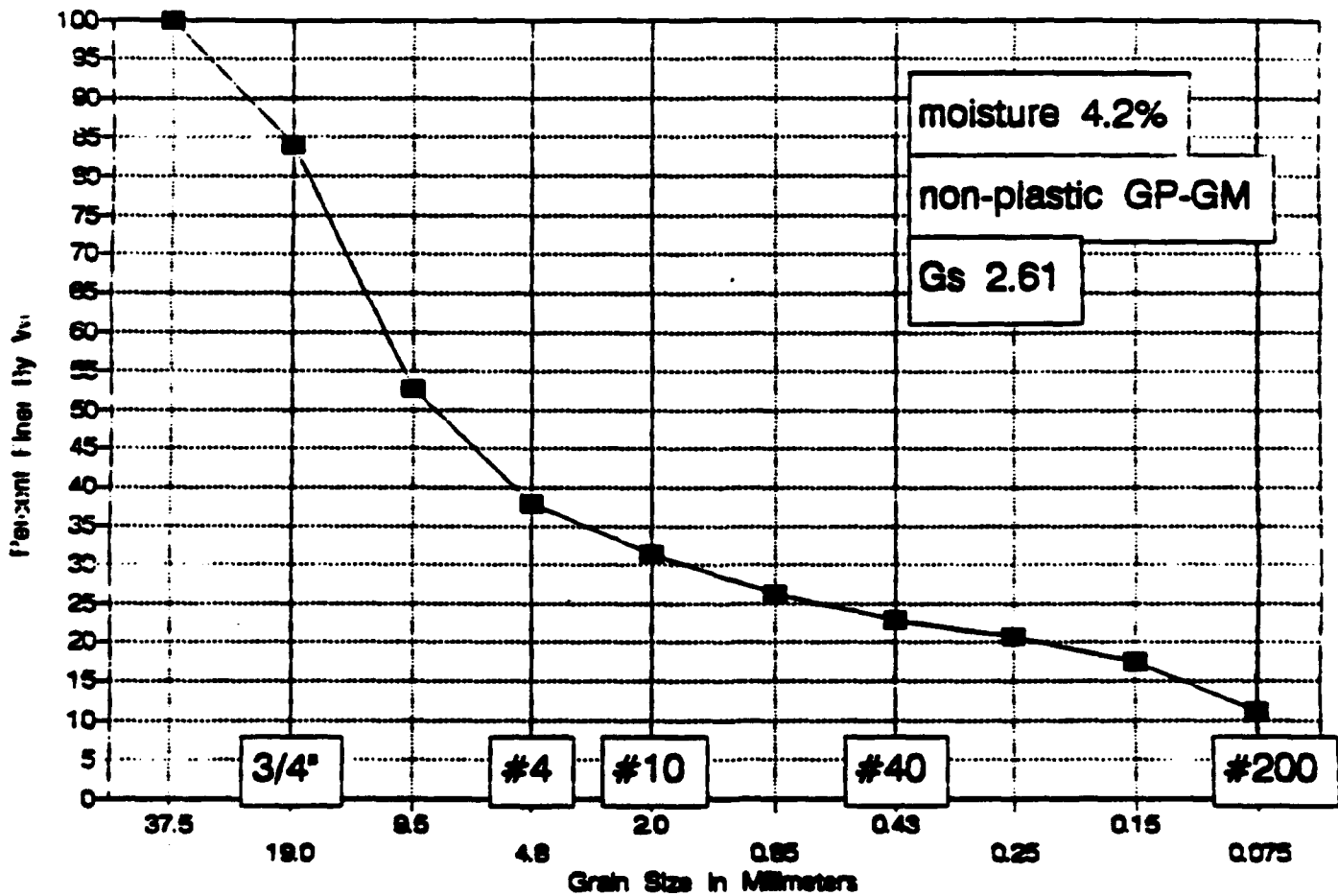


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					<u>ND</u>

# GRADATION CURVE

Site SS-26-026, Sample at 0 to 0.2 feet



James M. Montgomery  
P.O. 2942-0130

Site ID	SS-26-026	Wt soil and dish	322.4
Depth	0-0.2 feet	Dry soil & dish	313.9
		Dish	109.6
Moisture Content =	4.2		

#### SIEVE ANALYSIS

Dry weight of total sample= 204.3

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	32.64	84.02%	84.0	19.0
3/8 inch	96.77	52.63%	52.6	9.5
# 4	126.9	37.89%	37.9	4.8
# 10	140.22	31.37%	31.4	2.0
# 20	150.72	26.23%	26.2	0.85
# 40	157.78	22.77%	22.8	0.43
# 60	162.22	20.60%	20.6	0.25
# 100	168.75	17.40%	17.4	0.15
# 200	181.81	11.01%	11.0	0.075

# MECHANICAL ANALYSIS

SA

DATE 9/4/77 BY LAF  
 JOB NUMBER -10061 OWNER/CLIENT JM Montgomery  
 LOCATION \_\_\_\_\_  
 BORING CG-26 SAMPLE 026 DEPTH 0-0.2

NUMBER OF RINGS	<i>bag</i>	DISH	<u>206</u>
WT. OF RINGS & WET SOIL	<i>/</i>	WT. OF DISH & WET SOIL	<u>322.4</u>
WT. OF RINGS	<i>/</i>	WT. OF DISH & L	<u>313.9</u>
WT. OF WET SOIL	<i>/</i>	WT. OF MOISTURE	<u>109.6</u>
FIELD DENSITY	<i>/</i>	WT. OF DISH	<u>109.6</u>
DRY DENSITY	<i>/</i>	WT. OF DRY SOIL	<u>109.6</u>
		FIELD MOISTURE CONTENT	<u>4.2</u>

WASH SEVE \_\_\_\_\_ DRY SEVE \_\_\_\_\_ WEIGHT OF OVEN DRY SOIL \_\_\_\_\_ (grams)

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		0		
		3/4"		32.64		
		3/8"		96.77		
		#4		126.90		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		140.22			
		#20		150.72			
		#40		157.78			
		#60		162.22			
		#100		168.75			
		#200		181.81			
		PAN					
		TOTAL					

**END  
FILMED**

**DATE:**

**8-94**

**DTIC**